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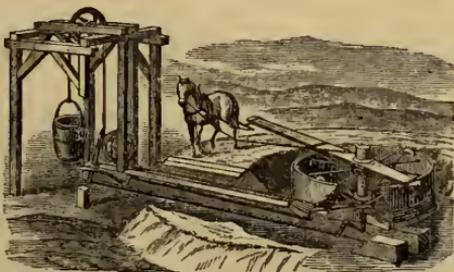
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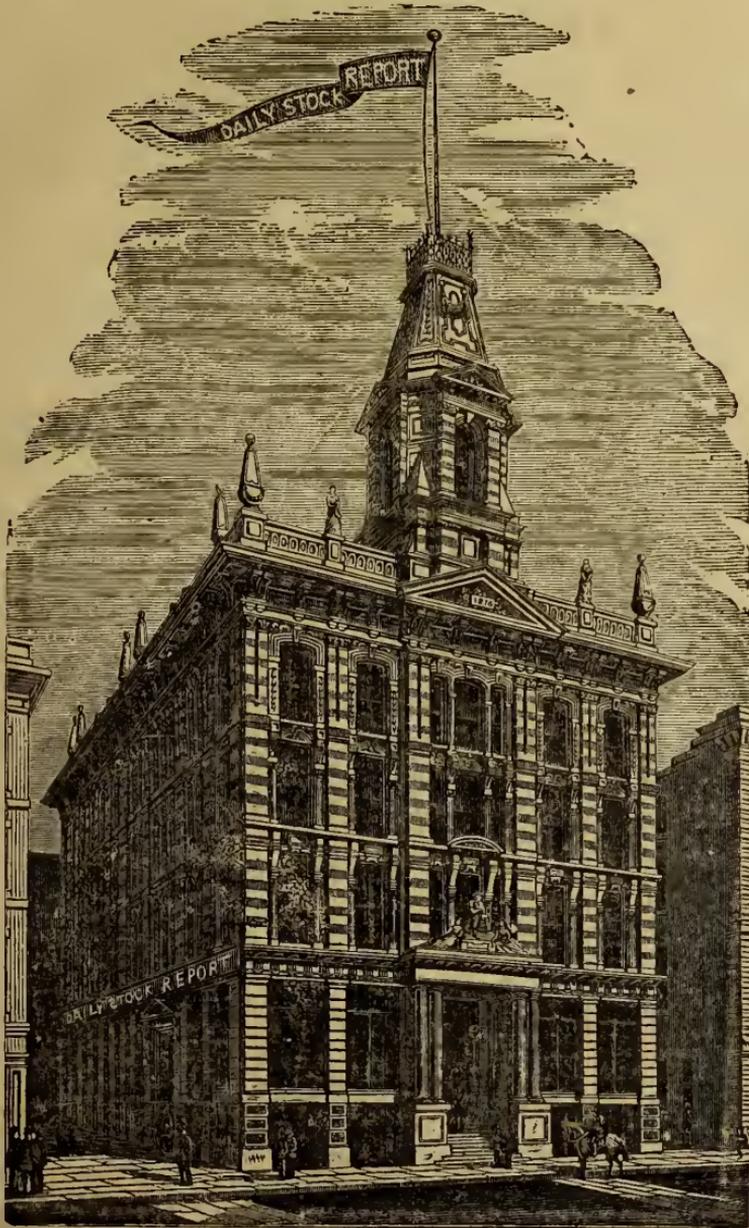
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ANNUAL

NOV. 1898.

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AND

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OF THE

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P 11
1878

INTRODUCTORY.

THE STOCK MARKET.

As the primary purpose of the publishers of the ANNUAL MINING REVIEW is, to present a fair and, as far as possible, correct picture of the condition of the mining interests of the Pacific Coast, such a picture would be incomplete without a description of the market in which mines and mining stocks are bought and sold. As this market extends over the whole Pacific metropolis, and the buyers and sellers of stock include the millionaire and the mendicant; the modest matron and the brazen courtesan; the prudent man of business and the reckless gambler; the maid servant and her mistress; the banker and his customers—it is easy to understand the difficulty of describing such a market.

Among the most interesting and instructive incidents in the best books of travels, are the descriptions of the slave market at Cairo, in Egypt; the great Russian Fair at Novgorod; the Bourse of Paris, and the Royal Exchange of London. Each of these great marts of trade and speculation has peculiarities. The influence of the Paris Bourse and the London Exchange affects the operations of the whole commercial world. So, the operations of the San Francisco Stock Market affect the Paris Bourse and the London Exchange—consequently, it is one of the ruling powers of the commercial world, and like these other great marts, it has peculiarities of its own. A measure of the importance of a portion of the California Stock Market may be formed from the returns of the San Francisco Stock and Exchange Board, the Pacific Stock Exchange, and the California Stock and Exchange Board, the three great public markets where stocks are bought and sold, and publicly record their business, which aggregates hundreds of millions annually. The sales of mining shares at the Stock Boards of San Francisco amounted for the year 1877 to a total of \$119,699,730; yet the mining corporations whose stocks or shares are on the list of these Boards are but few as compared with the thousands of mines in process of development in the various States and Territories on the Pacific Coast. Thousands of these outside mining ventures are regularly incorporated and have their shares on the outside market. Millions of dollars are annually expended in the development of such mines, and much of the gold and silver that enters into the aggregate of the quantity obtained, is from these outside mines, frequently at a cost of more than the market value, the assessments levied on the stockholders paying the difference. Yet, now and then, some of these outside ventures are enormously profitable. This is the case at the present time on the great Comstock Lode. There are only one or two of the mines located thereon that pay any dividends to stockholders, though most of these mines produce large quantities of bullion. But it costs more than its market value; yet there is a reasonable ground to believe they may and will pay for working some time. This fact is a full and clear defense for stock speculating. Without this speculating, no mine that did not pay from the commencement of working could be prosecuted successfully except by the wealthy few. No dozen, or twenty, or a hundred men would or could have developed the Comstock mines as they have been developed, had they not divided their stock into hundreds of thousands of shares, and giving every one an opportunity to "take a hand in the game," for mining is but a game of chance. No human being can tell what a mine contains an inch below where it has been explored. The most expert miners and greatest geologists, who examined the Comstock years ago, were not aware of the existence of the great Virginia and California Bonanzas until the miners' picks exposed them, and in a few years brought to the surface, from nearly half a mile beneath, more than a hundred millions of dollars worth of gold and silver. And who shall say, authoritatively, that there are not other bonanzas on that lode, and in other localities? So long as there are probabilities of men making millions by speculating in mines, so long will they risk their money in stocks. If but a few attain to the eminence of a Flood, O'Brien, Mackey, Fair, Sharon, Jones, Baldwin or Keene, with their millions, thousands have made a comfortable competence by stocks. It is true, many have been ruined by speculating in them. But a careful comparison of the number of failures in stock speculations with those that occur in commercial business, manufacturing, and trading, will prove that judicious investments in mines are less risky than in almost any other business. The fact that every class of people continue to dabble in stocks, and every now and then numbers obtain a prize in the lottery, is an unanswerable argument in favor of the stock business. The judgment of the majority in this case is decidedly more convincing than that of the minority.

We had not intended to write a defense of stock speculating—which some of our readers may think we have done. We intended to give only an outline sketch of the Stock Market;

but as such a sketch would be incomprehensible to those who have never been in San Francisco and "seen the elephant," we were compelled to refer to causes that produce the strange effects on the market, which we shall describe. Without some such explanation as we have attempted to give, a stranger, going into one of our local Stock Boards when it is in session, would be disposed to think he had, by some mistake, got into a lunatic asylum; while the crowds of men and women of every class of society, who throng the streets in front of the regular Stock Boards "from early morn till dewy eve," would be inexplicable to him, if he did not understand the motive that calls them together.

The Stock Markets proper are the three "Boards" of incorporated brokers, already mentioned. No stocks are sold at these Boards or Markets except such as are entered on their lists and "called" by the callers. Nor is any one permitted to buy or sell these stocks in the Boards except the members thereof. It costs a considerable sum to have a stock listed and called, while a seat in the Boards varies in price from one or two thousand to thirty or forty thousand dollars. The rooms in which these Stock Boards conduct their business are among the most elegantly fitted-up places in the city. That of the San Francisco Stock Exchange, on Pine street, between Montgomery and Sansome, is more like the banqueting-hall of some great potentate than a place of business. It is of immense proportions, surrounded by a handsome gallery. At one end of this room is a grand canopy of crimson cloth, draped from an elegant gilt cornice. In front of this is a dais, or platform, about three feet above the level of the floor, on which is placed the desk of the "caller," the secretary, and clerks of the Board. The members of the Board are seated within a circular rail, in front of the caller. The clients of the members, who pay for the privilege of doing so, stand around outside the rail. The general public are permitted to occupy seats in the gallery, one end of which being reserved for ladies and their escorts—and it is generally well filled by them.

No description of the scene, when the business of the Exchange is in progress, can convey an idea of the excitement, noise, and seeming confusion that prevails. The moment the caller names a stock for which there is a demand, all the brokers rise from their seats and rush to the space in front of the caller, and yell the number of shares they will sell or buy, and the conditions, gesticulating like wild men—their eyes glaring, and hoarse with bellowing. They pull and tug and jostle each other as if in anger, till tired, when they resume their seats till the clerks make the entries and the next stock is called, when the scene is re-enacted—the men on the floor outside the rail surging and heaving in sympathy with those within the charmed circle like huge waves around a rock-bound shore. The less interested spectators in the gallery hold their breath with excitement at the strange scene before them. All the time the struggle goes on, an army of telegraph-boys in uniform, and hundreds of private messengers, arrive or are sent in haste with messages to agents on the outside, who convey the news to their clients and friends by other messengers, bulletin-boards, or telegraph, till the whole community becomes almost wild with the excitement of the hour.

The motive power of this machinery of the Stock Market is the caller. Amid the Babel of sounds his herculean form and stentorian lungs may be heard above the din around him. Howard Coit, the caller of the San Francisco Stock Board, has sold more stocks than probably any other man in the world, and conducts the mammoth business under his control so honestly and fairly as to have won the respect and confidence of all interested in the Stock Market. When it is remembered that millions of dollars may be lost and won at one of these sessions, and that the surging mass of men without the rail are the chief winners or losers in the struggle, there is little to be wondered at, if they become excited. Nor is the excitement confined to the place wherein it is thus generated. The grand granite building in which this Board holds its meetings, is literally netted with telegraph wires, which connect with the office of nearly every prominent stock-broker, banker and merchant in this city, and with every town and village in the interior of this and all the other States and Territories on this coast, with the Eastern States, and with Europe. As a stone cast into a placid lake creates a movement over its whole surface, so the price of mining stocks in San Francisco causes a movement in the money markets of the whole civilized world. There are millionaires in New York, London, Paris, Antwerp, and Berlin, who are as deeply interested in the movements of our mining stocks as are those who attend the markets here. No sooner has the Board adjourned, than the steam printing-press throws off thousands of reports of the business done and the quotations of the various stocks. These are quickly spread on bulletin-boards all over the city, around which may be seen eager crowds of men and women, noting the rise or fall of stocks in which they have ventured their little capital. When, as has been the case within the past few weeks, such stocks as the Sierra Nevada, Bodie, Union, Utah and others, have fluctuated from one hundred to three hundred per cent. in a day or a week, and the poor man has become rich and the rich man poor in an hour, is it any wonder that people everywhere become excited, and everybody dabbles in stocks? When we state that a violent fluctuation in prices, such as sometimes occur, causes a rise or fall of ten to twenty millions of dollars in a single day, some idea may be formed of the number of individuals that must be affected by such changes; while some idea of the proportions of the stock business may be formed, when we state that the nominal value of the stocks issued by incorporated companies in California and Nevada exceeds \$300,000,000,000. Of course, much of this stock is worthless, but still it is bought and sold, and is in the stock market.

Those who attend the Stock Boards, but are unacquainted with the terms used by the

brokers, are puzzled to understand the jargon of the market. "Sell 'em cash," yells one; "sell 'em regular," shouts another, while another screams out, "Sell 'em seller 30." To sell "for cash," means that the stock must be delivered and paid for before 2 P. M. of the following day. To sell "regular," means delivery on the following day. All sales made in the Board or on the street by brokers, after the adjournment of the Boards, are considered regular unless especially specified otherwise. To "buy or sell 30," means that the seller or buyer has thirty days to deliver or demand the stock. Most of the brokers buy stocks for cash, and hold them for customers for thirty days, charging a heavy interest for the accommodation, the customer paying such "margin" or security as the broker demands. Generally this margin is about 20 per cent. of the price of the stock. Should the stock fall in price, the customer has to provide more "mud," or make the margin up to the 20 per cent., or the stock is sold at the risk of the customer. If the stock of a "buyer 30" should rise the day after the purchase, he has the right to demand the stock, or the difference in the price at which he bought and which it is quoted at the Board.

At the regular meetings of the Stock Boards, all the transactions are recorded by the secretary and clerks; but at informal sessions the brokers keep their own records. No one who has not seen one of these informal sessions can have any clear conception of the noise, confusion and tumult; yet, strange to say, there is seldom any mistake in their entries of purchases or sales, though they sometimes sell thousands of shares at these informal sessions. The business of the stock market is not confined to the Boards—it extends everywhere. The great center of the curbstone crowd, who annually buy and sell millions of dollars worth of stocks on the street; from 9 A. M. till 3 P. M. it is sometimes almost impossible to pass the corners of Pine and California Streets, and Montgomery Street and Leidesdorff, between them; while every leading saloon, hotel, and boarding house has its coterie of speculators, among whom may be seen ladies, servant girls, mechanics, laborers, boys, girls—in short, "everybody buys 'em," as the patent medicine vendor says of his nostrums.

The influence of the Stock Market on San Francisco has been and is immense. As may be imagined, a business in which nearly everybody is interested must have an influence on public opinion. Stocks form the theme of everybody's conversation, in public and private. The stage, the pulpit, the press, the bar (not of the saloons), and the forum, all refer to stocks. The slang of the market permeates the conversation of the most refined society. The store-keepers ticket their goods with the names of the richest mines. The bar-tender mixes drinks "à la bonanza," or for a "winze," or a "lower level." Our streets, squares, and parks, and not a few children, are named after stocks.

It must not be accepted as true that the Stock Market is a sort of gambling-hell, and that all the dealers in stocks are sharpers and frauds. Many of the most worthy citizens in the State are stock-brokers, and the business is generally conducted with more fairness than the average of general trade. The stock-broker cannot mix his wares as the manufacturer mixes shoddy, or as the merchant sometimes adulterates his goods. The stock in a mine is more under legal supervision than are the manufactures or imports of the merchants.

Whoever walks through the blocks of buildings bounded by Pine, Sacramento, Kearny, and Battery streets, the very heart of our city, in which have been erected the most palatial stores, banks, and offices, and notes the immense number of stock-brokers' offices, the names of the brokers, and the enormous business they do, may get an insight into the extent of the Stock Market, and of the sort of men who conduct it. The monthly returns of the Clearing-house show the influence of the business on the whole community. The recent activity of the Stock Market made a difference of several millions in the business of the banks.

England may be "a nation of shop-keepers," but San Francisco is decidedly a community of stock-dealers; and, so long as enterprise, skill, and a liberal expenditure of money offers such probabilities of success as are offered by the gold and silver mines of the Pacific Coast, so long will there be life and activity in our Stock Market. The facts and figures contained in the present number of the *MINING REVIEW*, though incomplete, are still amply sufficient to convince any reasonable person of the extent, value, and enormous profits attainable by judicious investments in mining stocks.

SAN FRANCISCO STOCK AND EXCHANGE BOARD.

The Morality of Stock Dealing.—The Beginning of Stock Operations in California.—The Old Method of Operations.—Steps Preparatory to the Organization.—The Original Articles and By-Laws.—The first Meeting and subsequent Organization.—Charities of the Members.—Present Financial Condition of the Board.—The new Building and Board Room.—Value of Seats, and the Security to the Public vouchsafed thereby.—Early Transactions compared with present Business.—What the Board has accomplished for the Coast.—List of Presidents, Officers, Members.—Constitution, By-Laws, and Board Regulations.

There are a few persons in almost every community who belong to a particular set of good people, and who think, in the fullness of their catechism and bread and butter, that it is a great sin to buy and sell stocks. For a wonder, one or two of these particularly good people occupy editorial chairs, and try to teach the people morals; as if morals were anything more, primarily

and literally, than doing as others do. The man who attends church is a moral man in a church-going community; and, by a parity of reasoning, the man who deals in stocks in any town the Pacific Slope is thus far a moral man, for the majority of the people are of his ilk.

The fact is, there is no law of chance whatever in stock dealing, any more than there is in buying and selling any other real estate. It is a matter entirely of judgment. For instance, a man forms his opinion in a legitimate business manner, and after a thorough investigation of that real estate in a certain part of the city, by reason of the influx of people, or for other causes, is going to rise in value. Acting on his judgment, he buys in that quarter, and if he is correct in his conclusions, he realizes by selling at a greatly advanced price. If not correct in his deductions, he fails to make the turn he anticipated. It is precisely so in stocks, which are real estate on the Comstock, or elsewhere, and are bought and sold in shares now, instead of by the acre, as outside landed property, or by feet and inches, as formerly. The difference is in degree, not in kind; in practice, not in principle; and there is in the business nothing but the chances which attach to many strictly "moral" transactions that are winked at and condoned by these "holier-than-thou" pretenders.

The development of a mine or a mining district does not differ in kind from the development of any other real estate. The only difference is, that the man who takes up a homestead under the law of Congress must levy an assessment upon his own land, which has but a single owner, and pay it from his own pocket, in order to improve his property; and in the case of a mine, the officers, who are the head, levy the assessment upon the property of the company, and the individual members pay the amount, according to the interest each holds. Money is the great base upon which the whole superstructure of society and civilization rests, and without it nothing will be accomplished in religion or business; and it makes no difference whether it is furnished by one or the many. What makes operations in stocks more general, are the facilities for their transaction, and the fact that there are rapid and great fluctuations in prices. Wherever immorality attaches to that fact, it is impossible for any one not especially "to the morbid born" to see.

But, moral or immoral, men will prospect mining regions, develop mines, and buy and sell mining stocks; and the San Francisco Stock and Exchange Board was organized with a view of facilitating operations therein.

A sketch of the discovery of the Comstock Lode will be found elsewhere; and also an account of the multiplication of locations and the advent of milling in that vicinity. Stock operations commenced about the same time, and were carried on in feet and inches. These transactions reached a fever heat in 1861, and the sales were made as any other real estate sales, wherever buyer and seller chanced to meet. Previous to that time, there existed a Board of Brokers, whose chief occupation was to sell water and gas stocks, bonds, real securities, etc.; but the transactions in mining estates grew to such an enormous extent, and the sales by feet were productive of so much fraud and deception, and, withal, the people became so anxious to invest their money in mining property, that a change was demanded. Before the establishment of the Board, some of the large mine-owners would meet in the morning, and, by a pre-arranged plan of operations understood by them, pretend to make great sales, one to another. This would be immediately reported to the headquarters of the brokers, at the Bank Exchange, and thus an impetus to transactions be given, and prices raised for the day. Under such a state of things, it was almost impossible for any one on the outside to get an opportunity to make a fair and legitimate investment. Parties were, however, seldom bit the second time, and those interested soon desired to establish a Board similar to the Exchange Board of New York. The subject was talked over and agitated, till finally Frank Lawton, the old Secretary of the Board, suggested to several brokers that a meeting be had, and a regular Stock and Exchange Board organized. The proposition met with both favor and opposition from the dealers. Many of the large mine-owners also opposed the movement as prejudicial to their interests, and likely to let a lot of unprincipled and irresponsible speculators loose upon the community. The first meeting was attended by barely ten. Further agitation, however, increased the number to twelve, when articles were signed and an organization effected, after the plan of the New York Stock Exchange, with a view to facilitate the buying and selling of stocks, and for the mutual protection of its members. Others, subsequently, were glad to avail themselves of the benefits of the organization and added their names to the list. The articles were as follows:

SAN FRANCISCO, Sept. 1, 1861.

For the purpose of facilitating the purchase and sale of stock, and mutual security, we the undersigned, propose to organize a San Francisco Stock Exchange, on the plan of the New York Stock and Exchange Board. In furtherance of which object we do each agree to pay in the hands of the Treasurer, when chosen, the sum of \$100:

J. Perry, Jr., T. C. Sanborn, S. Heydenfeldt, Geo. R. Barclay, H. C. Logan, Robt. C. Page, C. H. Wakelee, Joseph Grant, J. B. E. Cavallier, S. C. Bruce, P. C. Hyman, Harry Gratcher, P. B. Cornwall, N. A. Watson, Wm. L. Higgins, E. J. de Sa Marina, Simon A. Franklin, Lawton, D. C. Williams, Henry Schmeidell, H. P. Wakelee, E. W. Teasdale, O. A. Hart, R. E. Brewster, A. Marins Chapelle, E. Dupre, A. J. Shipley, R. H. Sinton, T. A. Galbert, Wm. Willson Lawton, Frank M. Pixley, David Henriques, Wm. H. Parker, Wm. Garrison, J. Downe Wilson, A. Van Lokeren, Chas. K. Smith.

The first meeting, called for the purpose of organizing the Stock Board, was held on the 8th of September, 1862, at the office of J. B. E. Cavallier, R. C. Page, Joseph Grant and Samuel Bruce, who were then engaged in the real estate and general brokerage business. Their office was at 428 Montgomery Street.

These gentlemen, together with Messrs. Franklin Lawton, Theodore C. Sanborn, E. J. Santa Marina, Henry Schmeidell, John Perry, Jr., and T. W. Teacle, were most active in their efforts to found the institution.

At this meeting temporary officers were elected, viz: Mr. Henry Schmeidell as chairman *pro tem.*, and Mr. Frank Lawton as secretary *pro tem.* A committee of six was also chosen to draft a constitution and by-laws for the Board, namely: Messrs. Perry, Sanborn, Critcher, Page, Henriques and Lawton.

Messrs. Shipley, Chapelle, Wakelee, Grant and Watson were appointed a Committee of Arrangements.

At the next meeting, held Sept. 11, 1862, the constitution was reported by the committee and adopted by the meeting, and permanent officers of the "San Francisco Stock and Exchange Board" were balloted for and elected as follows:

J. B. E. Cavallier, President; E. W. Teacle, Vice-President; Franklin Lawton, Secretary; Henry Schmeidell, Treasurer.

At a meeting, held Sept. 12, 1862, by-laws were reported by the committee, and after some modification, were adopted.

The original fee or assessment on the organization of the Board was \$100 for membership; but it was only found necessary to assess \$50 to each member to make up a fund of \$2,000. A small room was then rented in Montgomery Block for the use of the Board. It was furnished with a plain table, in horse-shoe form, desks for the president, secretary, etc.

At first business in the Board was very dull, the members, with two or three exceptions, being very inexperienced in stock transactions on the Exchange Board.

Shortly after the Board was fully organized, business began to increase, and many new applications for membership were received. The Board thereupon concluded to increase their numbers. The fee was also increased to two hundred and fifty dollars, then to five hundred, and finally to one thousand dollars. And the number of members was limited to eighty, which number was only recently increased to one hundred. The funds of the Board soon accumulated, and from that day to this they have never lacked for money for their own uses, and for many very large and praiseworthy charities.

After occupying this room in Montgomery Block awhile, the Board found it entirely too small for their purposes, and they removed to the building opposite, at the southwest corner of Washington and Montgomery streets, belonging to Michael Reese.

The Board remained here for some six or eight months, and then found this also inadequate to their wants, and again moved, this time to a large room in the building over the old Metropolitan Theater, the west side of Montgomery Street, between Washington and Jackson Streets, built expressly for the members of the Board by Mr. Eugene Sullivan. That is the same room where the Fifteenth District Court is now held. This room was fitted up under the supervision of Messrs. Cavallier and Lawton, then president and secretary of the Board, and was the most convenient and comfortable room occupied by the Board up to that time.

About the time of this last removal, the Bank of California was moved to the new building on California Street, where it now is, other moneyed institutions congregating on California Street, or in its neighborhood, which began to be the moneyed centre of the city.

When the new Merchants' Exchange Building, on California Street, between Montgomery and Sansome Streets, was erected, it was with the understanding that the Board should occupy a room in it, and the Board took stock in this building to the amount of \$20,000, which they still own. They moved from the Metropolitan Theater to the Merchants' Exchange, and occupied the room designed for them, on completion of the building, when, finding it inconvenient and not large enough, they removed to Duncan's Building, 411½ California Street. Here they remained until the erection of the San Francisco Stock and Exchange Building on Pine Street, whither they removed October 1st, 1877.

The charities of the San Francisco Stock and Exchange Board have been most remarkable. Large sums have been voted to aid the Orphan Asylum at various times. When Chicago had its baptism of fire and a wail of distress resounded throughout the land, this institution responded promptly and effectively. During the Winter of 1875, Marysville was inundated, and this Board immediately sent to their relief \$10,000. General Brislin, U. S. A., came from Omaha and went before the Board, and in simple, eloquent and pathetic language told the members of the suffering and distress of the people of Nebraska, on account of grasshoppers. In less than twenty minutes the individual members of the Board subscribed \$10,000, which amount was duly forwarded to its destination and applied to the humane purpose of relieving that suffering people. When the heart of Virginia City was burned up, and a thousand houses were swept by the storm of fire from existence, the Board contributed \$3,000 for the relief of the sufferers. These things show that, however anxious these gentlemen are to make money, their hearts are tender and pockets ever open at the call of suffering humanity.

In the early experiences of the Board, no charge was made for entering the name of any mine upon their list, and calling the same during transactions; now, a fee of \$1,000 is

MEMBERS.

Austin, Alex.*	Erlieh, M.	Jones, J. P.	Paterson, James
Atkinson, T. T.	Fitch, J. R.	Keene, J. R.	Rogers, R. F.
Brosks, S. H.	Freeborn, J.	Kenney, Chas. A.	Rorke, E. B.
Bonyne, C. W.	Fox, C. W.	King, Jos. L.	Schmiedell, H.
Boswell, S. B.	Flood, J. C.	Kilgour, L.	Shotwell, J. M.
Brown, J. W.	Fry, J. D.	Latham, J. K. S.	Smiley, G. W.
Budd, W. C.	Felton, C. N.	Latham, J. H.*	Stentonborough, C. H.
Burling, Wm.*	Foster, W. H.*	Lissak, A. H. Jr.	Steinhart, S.
Berry, F. C.†	Gazier, I.	Lozan, H. C.	Schmitt, M.
Bloed, Bernard.	Goodman, J. T.	Loveland, L. F.	Swift, Frank.*
Coleman, J. W.	Greenebaum, J.	Lawton, Franklin	Scott, H. H.
Coffin, A. F.	Gurnett, A. G.	Lynch, J.	Sharon, Wm.
Crocker, J. H.	Hall, E. F., Jr.	Mackintosh, Wm.	Steel, Thomas.
Cope, G. W.	Hall, M. P.	Marks, Joseph	Turnbull, Walter.
Cahill, E.	Hill, H. L.	Maryre, G. T. Jr.	Van Wyck, H. L.
Charles, H. A.	Herr, J.†	Mabony, J. H. Jr.	Wattles, J. B.
Child, E. F.	Hickox, Geo. C.	McDonald, M. L.	Williams, H.
Coit, H. H.	Hubbard, C. V. D.	McDonald, M. J.	Wilke, F. E.
Coleman, Jas. V.	Higgins, W. L.	McKenly, J.	Woods, F. H.
Courson, G. A.	Hasssey, F. A.	Murphy, E. P.	Wilson, J. S.
Dixon, S.	Hale, W. E.	Morrow, R. F.	Winans, J. C.†
Duncan, W. L.	Hoak, W. E.	Neal, C. S.	Wakefield, S. B.
Dewey, E. E.	Hookey, R. C.	Noble, H. H.	Walker, O. V.
Everett, A. F.*	Herman, M.	O'Brien, W. S.*	Yost, Daniel Z.
Eye, E. E.	Ives, G. I.	Peckham, E. P.	Zinnus, L. A.
	Jones, J. H.		

*Deceased. †Board Seat.

J. W. McCluney, Assistant Secretary, room 4, San Francisco Stock and Exchange Building.

Constitution and By-Laws.

CONSTITUTION.

ARTICLE I—*Title of the Association.*—The title of this Association shall be "THE SAN FRANCISCO STOCK AND EXCHANGE BOARD."

ARTICLE II—*Number of Members.*—The number of members of this Board is limited to one hundred.

ARTICLE III—*Property of the Association.*—The legal title and ownership of all property, effects and assets of this Association, shall vest in the officers named in Article IV, in trust for the benefit and enjoyment of its members.

Whenever a member shall be suspended from or be deprived of the privileges of membership, such suspension or deprivation of the privileges of membership, until removed by the action of the Board, shall operate as a full release of all his right, title and interest in and to the property and assets of the Association.

No member, under any circumstances, shall be deemed to have or claim, or possess any individual right, title or interest in the property or assets of the Association, except when the same shall be finally dissolved and its affairs wound up by its then remaining members.

ARTICLE IV—*Officers, Elections, etc.*—The officers of this Association shall consist of a President, Vice-President, Chairman, Secretary and Treasurer, who shall be elected by ballot, annually, on the second Monday in January; and in case of any vacancy, a new election shall be held forthwith for the unexpired term.

Any officer may be removed by a vote of two-thirds of the members of this Association.

ARTICLE V—*Duties of the President.*—It shall be the duty of the President to see that the several provisions of the Constitution and By-Laws are enforced, and have a care of the general interests of the Board. He shall appoint all committees, and preside at all meetings except the calling of stocks; and he shall be, *ex officio*, a member of all committees.

He shall, at each annual election, appoint the following committees, viz: An Executive Committee of five members, to whom shall be referred all applications for donations, and all matters affecting the interests of the Board not otherwise specially provided for in the Constitution and By-Laws.

A Finance Committee of three members, to have the general supervision, management and control of all financial affairs of the Board; to whom shall be presented all bills and demands against the Board, and by whom the same shall be audited and approved before payment; to whom shall be reported by the Secretary all moneys collected, and the sources from which they are collected; to whom shall be reported by the Treasurer the amount of money received, and from what sources; to whom shall be reported by the Roll-Keeper all fines; to whom the Trust Fund Committee shall furnish a detailed statement of their transactions, and a record of whose proceedings and of said bills, demands, collections, dues and fines shall be kept by the Secretary of the Board, acting as Secretary of the Committee. Said Committee shall meet on the first Monday of every month, and at other times when business may require. The Secretary, Treasurer, Roll-Keeper and Trust Fund Committee shall report, as herein required, on the first Monday of every month, and at other times, when required by the Committee. The Committee shall make at least quarterly statements to the Board.

A Stock List Committee of five members, to whom shall be referred all applications of companies to be placed on the regular list.

He shall appoint such Assistant Secretaries as may be required, at such salaries as may be fixed upon by the Board.

A Roll-Keeper, at a salary not to exceed two hundred dollars per month, whose duty it shall be to record all fines, and report monthly to the Secretary the amount levied upon each member.

A Sergeant-at-Arms, and such other Assistants as may be required.

All appointments made by the President shall be subject to the approval of the Board.

ARTICLE VI—*Duties of the Vice-President.*—In the absence of the President, the Vice-President shall perform all the duties pertaining to the office of President.

ARTICLE VII—*Duties of the Chairman.*—The Chairman shall call stocks at such hours as the Board may from time to time direct, maintain order and enforce the rules. He shall receive such salary as may be fixed upon by the Board; it being stipulated that, before entering upon the duties of the office, he shall bind himself by a solemn pledge to the Board, through its President, not to act as a broker, or be interested, directly or indirectly in the purchase or sale of stocks. In the absence of the Chairman, the members present may choose a Chairman *pro tem*.

ARTICLE VIII—*Duties of the Secretary.*—It shall be the duty of the Secretary to keep a full and faithful record of the purchases and sales—which record shall be considered binding on the members; to keep complete minutes of the proceedings of the Board, and to take care of the books and papers of the Association; to collect all moneys due, and pay the same weekly into the hands of the Treasurer, and to perform such other duties as the Board may direct. He shall also furnish on the 1st of each month, to the members of the Board, a list of all parties delinquent to them.

ARTICLE IX—*Duties of the Treasurer.*—It shall be the duty of the Treasurer to take charge of all the moneys belonging to the Association, subject to such regulations as the Board may from time to time determine.

ARTICLE X—*Proposals for Membership.*—Any member proposing the name of an applicant for membership in this Board shall, at the time of his nomination, state in open Board the name of the person to whose seat said applicant desires to succeed.

ARTICLE XI—*Election of Members.*—All members shall be elected by ballot, and every applicant for admission shall be proposed at least five days preceding his election, and ten negative votes shall exclude.

Each member shall be furnished with a ticket, on which shall be printed the words "FOR ADMISSION," and also a ticket on which shall be printed the words "AGAINST ADMISSION," and the tickets and the letters thereon shall be of the same size and color; and no member shall be permitted to deposit a ballot that is not folded in such a manner as to conceal the printed letters thereon. If the applicant be rejected, he shall not be renominated within five days thereafter.

The name of the applicant shall be conspicuously posted in view of the members, at the desk of the Secretary, from the day of nomination to the day of election. Only one candidate shall be balloted for on the same day. No election shall be valid unless fifty votes are deposited in the box. At the election the ballot-box shall be placed in charge of the acting Secretary, and the poll shall be opened at the hour of opening the Board, and continue to the conclusion of the call of stocks, when the presiding officer shall request any member who has not voted to do so. The President shall then appoint a committee of three to count the ballots, one of whom shall be the party proposing the candidate, or his seconder. He shall then declare the result of the ballot. Should any discrepancy be discovered between the tallies and the number of ballots in the box, a new ballot shall be taken at the next session of the Board.

No member of this Board shall belong to any similar organization.

ARTICLE XII—*Suspended Members—Re-election, etc.*—Any member failing to meet his engagements in the Board, shall be suspended until he has settled with his creditors.

If he applies for re-admission within six months of his failure in the Board, a committee of three members shall be appointed by the President to inquire into the causes of his failure, who shall report before his seat is forfeited by limitation, and on their presenting a favorable report, announcing that he has settled with his creditors, he may resume his seat in the Board, upon the assent, by ballot, of two-thirds of the members then present.

ARTICLE XIII—*Disposal of Seat and regulating same.*—In case of retirement of a member in good standing, he shall have the right to dispose of his privileges in the Board, and to nominate a successor to fill the vacancy occasioned by his retirement; provided, that no nominee of a retiring member shall acquire any right or privilege until elected in the manner and form prescribed by this Constitution; it being distinctly understood and agreed between the Board and each member thereof, that the Board reserves the right to reject any nominee.

In the event of the death of a solvent member, the Board will dispose of the vacant seat to the best advantage for the benefit of his widow and children, or those persons who shall be designated by him in his last will and testament. But no person shall be designated as or permitted to become a successor to the privileges of membership in the Board by virtue of any instrument in the nature of a will.

Any member who has been suspended for six months, and who has not made a satisfactory settlement of his contracts in the Board during that time, shall be deprived of all privileges of membership, and his seat shall revert to the Board, and be appropriated to satisfy his creditors in the Board, as follows:

Whenever any member shall have been deprived of all privileges of membership, pursuant to this Article, or shall voluntarily surrender his membership for the benefit of his creditors in the Board, the President of the Board shall call a meeting of the creditors in the Board of such person, who shall thereupon present to him their several claims against the delinquent, and the President in all such cases shall be *ex-officio* a trustee for such person and for his creditors in the Board; and the said trustee shall be vested with all the rights and privileges formerly held by such person in the Board, and shall dispose of the same in the same manner that a person retiring in good standing may dispose of his seat and privileges. The proceeds of any such disposition so made shall be devoted by the said trustee to discharging the obligations due by such person to members of the Board, and any surplus remaining shall, after having satisfied all other claims against him, be delivered to the delinquent or to any person authorized to receive the same. If the amount received by said trustee shall be insufficient to discharge all the obligations in the Board of such person in full, then the trustee shall apportion it ratably among the creditors in the Board, paying to each creditor in the Board such proportion of moneys realized by him as the claim of each creditor bears to the total amount of claims proved by the creditors in the Board against such person.

The Board may, however, by a vote of two-thirds of the members present, extend the time for settlement of any suspended or delinquent member for a period not exceeding thirty days.

ARTICLE XIV—*Delinquents may voluntarily surrender Seats.*—Any delinquent member may waive his right of redeeming his privileges in the Board. He may do so by notifying the President of the Board in writing that he is unable to meet his engagements with members of the Board upon contracts for the sale or purchase of stocks, and requesting him to call a meeting of his creditors in the Board, stating them; the President shall thereupon take such action as is required by Article XIII to be taken by him in respect to one deprived of all privileges of membership pursuant to said Article; and the like proceedings for the sale of his seat; and distribution of proceeds shall be had as in a case arising under said Article XIII.

ARTICLE XV—*Sales of Seats for Account of Delinquent Members.*—In sales of seats for account of delinquent members, pursuant to Article XIII of this Constitution, the proceeds shall be applied to the benefit of the members of the Board, exclusive of outside creditors, unless there shall be a balance after the claims of members are paid in full. And the seat and privileges of every member shall be deemed and taken to be, from the time of his admission and as long as he remains a member, a continuing security to all members of the Board with whom he may deal, according to its rules, for the performance of his contracts and the fulfillment of his engagements.

ARTICLE XVI—*Quorum.*—In all cases, a majority of the Board shall be necessary to do business, except the calling of stocks.

ARTICLE XVII—*Commissions—Miscellaneous.*

Legal Tender Notes, on par.....	1/4	per cent.	Steamboat Company Stocks, on par.....	1	per cent
Fund Debt, on par.....	1	" "	Telegraph Company Stocks, on par.....	1	" "
Bank Stocks.....	1	" "	Water Company Stocks, on par.....	1	" "
Insurance Stocks, on par.....	1	" "	Bills of Exchange, on net amount.....	1	" "
Wharf Stocks, on par.....	1	" "	Mint Certificate, on net amount.....	1	" "
Gas Stocks, on par.....	1	" "	Specie, on net amount.....	1	" "
Railroad Stocks, on par.....	1	" "	Mining Shares, over \$500.....	1	" "

ARTICLE XVIII—*Fictitious Sales.*—No fictitious sales or contracts shall be made at this Board. Any member or members contravening this Article may, upon conviction thereof, be suspended.

ARTICLE XIX—*Payment and Transfer.*—In all sales of stocks, transferable in this city, either party shall have the right to require the purchase-money to be paid at the time and place of transfer.

In the delivery of stocks not transferable in this city, the purchaser shall have the right to require the deposit of the purchase-money in some local Bank, to be agreed upon by the contracting parties, or named by the President of the Board; such money to be held in trust until official notification of the transfer shall have been received.

ARTICLE XX—*Penalty for Non-compliance with Constitution and By-Laws.*—Any member refusing to comply with the foregoing Articles, or with the By-Laws, may have a hearing before the Board; and if he shall persist in refusing, two-thirds of the members present may declare him no longer a member, and he shall thereupon lose all the rights and privileges given by this Constitution.

ARTICLE XXI—*Altering Constitution or By-Laws.*—No motion for altering the Constitution or By-Laws shall be acted upon until at least five days after the motion has been submitted in writing, unless by the unanimous consent of the Board, and none shall be made except by the consent of two-thirds of those present.

In all cases the Article proposed to be altered or amended shall be stated.

ARTICLE XXII—*Trust Fund.*—Upon the death of a member of the Board, the Finance Committee may pay from the funds of the Board to such person or persons, as may have been

designated in writing by such deceased member, the sum of ten thousand dollars, in United States gold coin.

In case there shall be no such written disposition made, then to the widow of such deceased member, the sum of ten thousand dollars, in United States gold coin. In case there shall be no widow, and a child or children, then to such child or children equally, share and share alike. If there shall be neither widow, child or children surviving such deceased member entitled to receive said money, nor any disposition made of the same as herein above provided, then there shall be no payment or provision made under this Article.

The payments herein provided for shall be deemed absolute donations to the person or persons to which the same are made or applied, from all claim or control from any other source, or person.

In case the Finance Committee shall not have sufficient funds or moneys to meet the donations herein provided for, as the same shall be needed, the deficiency shall be made good at once, by assessments *pro rata* upon the members of the Board, and collected in like manner, and under the same penalties as other dues.

ARTICLE XXIII—*Candidates for Benefits of Trust Fund.*—No member of this Board admitted after this date (June 8th, 1875), shall have any claim or interest, in the Life Insurance Fund until he shall have filed with the Secretary a certificate from the Medical Examiner attesting his fitness to be accepted by this Board as a participant in the benefits of said Fund, and no member admitted since June 8th, 1875, and who had not filed his Medical Certificate before August 2d, 1876, as hereinbefore provided, shall be deemed to have acquired any claim upon or interest in the Life Insurance Fund, excepting under the following conditions:

A duly qualified physician shall be appointed by the President as Medical Examiner of the Board, who shall be considered as an appointee thereof, and whose fees shall be paid out of the general fund, in like manner as other ordinary expenses. The candidate for admission to the benefits of said Life Insurance Fund must submit to such examination as may be required by said Medical Examiner, who shall transmit to the President a sealed report containing a detailed statement of the physical state of health of said candidate, as well as his opinion concerning the fitness of said applicant to become a participant in the advantages of said fund.

The President shall, upon receipt of said report, immediately call a meeting of the Executive Committee, and shall refer the same to them for their consideration. The said Committee shall thereupon decide by ballot whether the Board is justified in admitting the said member to the benefits of said fund, and the decision of said Committee shall be reported to the Board at its next ensuing executive session. Provided, that the application of such member to have his life insured shall not be considered to have been admitted or rejected until the affirmative or negative action of the Executive Committee upon the same shall have been approved and ratified by this Board.

BY-LAWS.

ARTICLE I—*Order of Business.*—The Board shall meet daily—Sundays and legal holidays excepted.

The hours of business shall be: Morning session at 11 o'clock; afternoon session at 3 o'clock—except on Saturday, when there shall be held but one session, commencing at 11 o'clock A. M. The order of business shall be as follows:

1. Reading the minutes of the preceding day, other than purchases and sales, if called for by two members.
2. Notices of Election.
3. Calling the regular list of Stocks.
4. Calling Stocks at the request of members.

ARTICLE II—*Stocks to be Called.*—No Stock or Bond shall be placed on the list of Stocks, etc., regularly called at the Board, except by a vote of a majority of the members present; and application for the placing of stocks on the regular list shall be made directly to the Board by parties interested, subject to all rules and regulations of the Board, with full statement of the capital, number of shares, resources, etc., certified to and signed by said parties; but the Stock of no Company or Corporation shall be placed on said list unless first referred to the Stock List Committee.

ARTICLE III—*Fee for placing Mining Stocks on the List.*—The fee for placing Mining Stocks on the regular list shall be one thousand dollars each. This Board reserves the right to suspend the calling of any stocks, at any time, by a two-thirds vote of the members present. All mining stocks remaining on the list over one year shall pay one hundred dollars per annum in advance.

ARTICLE IV—*Stocks may be called by Paying Fine.*—After the regular list has been once called over by the Presiding Officer, any stock upon the list may be called up, the party calling paying a fine of twenty-five cents, and having the privilege of making the first offer.

No bid or offer for the purchase or sale of shares of Stock shall be entertained for fractions of a dollar of less than one-quarter where the value of the same is \$25 and over; of less than one-eighth where the value is \$5 and less than \$25; and of less than one-twentieth where the value is under \$5. The above rules shall govern the informal as well as the regular sessions of the Board.

ARTICLE V—*All Offers Binding—The Presiding Officer's Decision Final.*—All offers for Stock, etc., made and accepted, shall be binding whether called by the Presiding Officer or not; and in case there are two or more claimants for the purchase or sale, the Presiding Officer shall decide the same, or he may appeal to the Board for their decision. No sale shall be recorded unless made on the call, except by unanimous consent.

ARTICLE VI—*Specific Number of Shares to be offered.*—In all propositions to buy or sell, the offer shall be accompanied with some specific number of shares, the par value of which, other than Mining Stocks offered, shall not be less than five hundred dollars.

ARTICLE VII—*Reading the Minutes.*—After the call of each Stock, if any transactions have been made, the record of purchases and sales may be read, which reading shall confirm the same.

ARTICLE VIII—*Fine for interrupting the Presiding Officer.*—Any member interrupting the Presiding Officer while calling Stocks, by speaking or otherwise, shall pay a fine of not less than twenty-five cents, and not more than five dollars, for each offense, at the discretion of the Presiding Officer, from which there shall be no appeal. The levying of all fines shall rest exclusively with the Presiding Officer.

ARTICLE IX—*Informal Sessions.*—SEC. 1. No assembly of members of this Board outside of the Board-rooms, for the transaction of Stock business, shall at any time be allowed; and the said rooms shall remain open for the holding of Informal Sessions between 10 and 10:30 A. M., and between 2 and 2:30 P. M., excepting on Saturday, when only the morning Informal Session shall be held. All transactions made during such Informal Sessions shall be recorded in a book kept for the purpose, and shall be binding in the same manner as those of the Regular Sessions. Any adjournment of the Board shall affect its Informal, as well as its Regular Session, and the Board-rooms shall remain closed during the whole time of such adjournment.

SEC. 2. The Chairman of the Board shall preside at its Informal as well as its Regular Sessions, for the preservation of order and decorum—by the imposition of fines; for the settlement of disputes; and for the supervision of the records to be kept of the transactions made.

SEC. 3. The Assistant Secretary shall be in attendance during the Informal Sessions of this Board, to record all transactions at the request of members, under direction of the Presiding Officer.

ARTICLE X—*Stocks falling due on Holidays.*—All sales made at this Board shall be settled the following day, unless expressed to the contrary; and all contracts falling due on such holidays as are observed by the Banks shall be settled on the preceding day. All Stocks falling due on Sunday will be carried over until Monday.

ARTICLE XI—*Hour before which Stocks can be called for or delivered.*—In all sales of or contracts for Stocks between members of the Board, the party to receive the same shall not be bound to take them after half-past 2 P. M., but may postpone the same, without the charge of interest, to the following day; and any member, having a right to call on another for Stock, shall demand the same before the hour above specified, or be subject to a continuance of the contract until the following day.

ARTICLE XII—*Notice on Contract.*—In all contracts on time, made at the option of buyer or seller, one day's notice shall be given before Stocks can be delivered or demanded before maturity, and such notice shall be given at or before 2½ o'clock P. M.

ARTICLE XIII—*No Contracts to be made over ninety days.*—No contracts, for the receipt or delivery of Stock, etc., beyond ninety days shall be made at this Board.

ARTICLE XIV—*A Deposit on Contracts may be required.*—On all time transactions made at the Board, either of the contracting parties may require a deposit of twenty per cent. on the amount of purchase-money, as security for the fulfillment of the contract. Should the Stock contracted for vary in price to within five per cent. of the margin of said deposit, either party may call for an additional deposit of ten per cent., and may continue to do so as often as the latest deposit may be exhausted by change of price.

It being fully understood that either party may draw down any excess of twenty per cent. that may be in his favor.

When the seller deposits his Stock, the deposit paid by the buyer shall go to the seller.

When a member of this Board neglects or refuses to put up the usual deposit on time contracts, after due notice of requirement, it shall be at the option of the opposite contracting party to close the same by purchase or sale through the Presiding Officer, with some other member, on his account, the defaulting party to be held responsible for any differences. When any member neglects or fails to meet his contracts upon which deposits are made and in bank, the said deposits of Money or Stock shall be due and payable to the other party, upon the signature of the President or Vice-President of the Board.

ARTICLE XV—*Right of Broker to demand further Deposits.*—Where Stocks are bought or sold on time, or where money is advanced on Stocks by a Broker, he may call on his principal for an additional deposit, sufficient to maintain the original margin, but in the event of the margin at any time being reduced to within twenty per cent. of the market price of the Stock, then the Broker shall have the right to sell out or buy in such Stocks, through the Presiding Officer, with or without notice to his principal.

The Secretary shall make a record in a book kept for the purpose of all such sales or purchases, with the name of the Broker and Principal for whose account they were made.

All sales of delinquent stock made on account of any person not a member of this Board, and without the order of such person, shall be made by the Presiding Officer in the Board-room, at public auction, immediately after the adjournment of any regular session, and all persons (irrespective of membership) shall be at liberty to bid for the same.

Upon all purchases so made a deposit of twenty per cent. shall be made at the time, and failing such deposit, the stock shall be resold forthwith.

ARTICLE XVI—Place of Deposit.—When deposits are made on time sales, the seller shall have the privilege of designating the Banking-House in which the deposits shall be made. The seller shall be responsible for the money deposited, and for the delivery of the Stock. Should the purchaser object to the place of deposit, the President of the Board shall designate some other place of deposit, in which case the responsibility shall be mutual, as between buyer and seller.

ARTICLE XVII—Limitation of Contracts.—This Board will take no cognizance of contracts that remain unsettled five days after they become due, unless continued by mutual consent.

ARTICLE XVIII—Outside Contracts.—This Board will not recognize or enforce any time contracts made by members outside of the Board, unless the same shall be reduced to writing within three days, and any member of this Board having stock transactions with a party not a member, must, for his own protection, ask for a broker, otherwise the transaction must stand on its own basis, and the Board will not take any action in the matter.

ARTICLE XIX—Assignment of Contracts.—No assignment of any contract made between members of this Board will be recognized by the Board, except made by mutual consent, endorsed on the memorandum of contract.

ARTICLE XX—Payments.—All payments shall be in gold coin of the United States, unless otherwise agreed to by the Board.

ARTICLE XXI—No Stock to be called when Transfers are not allowed in the usual hours.—No stocks shall be called at the Board, the transfer of which is not allowed to be made within the usual hours of business as frequently as may be desired by the stockholders.

ARTICLE XXII—How Stocks are to be Delivered when the Transfer Books are closed.—Whenever the transfer books of a company shall be closed by any legal impediment, so as to render the time of their being open again uncertain, then the deliveries of stock of such Company, in satisfaction of contracts, shall be made by notarial power-of-attorney, irrevocable, containing assignments, and bill of sale, and certificate; the papers to be satisfactory to recipient, or passed upon by the Board.

ARTICLE XXIII—Privileges.—When any member agrees to pay a sum of money for the privilege of receiving or delivering stock at his option, the premium bid for the privilege shall be paid on the next business day. No member of the Board shall be allowed to bid for or offer privileges on any stock during the session of the Board.

ARTICLE XXIV—In case of Failure, Contracts closed at the market price of the day.—In case of the failure of any member of the Board, the President shall adjust all outstanding contracts with him at the average prices of the morning and afternoon Boards on the day he failed.

ARTICLE XXV—Default must be reported within forty-eight hours.—In all cases where a member of the Board shall fail to comply with his stock contracts, it shall be the duty of his creditors to report said default to the President of the Board within forty-eight hours after said default becomes known to them. No claim or contract, unless so reported, shall ever after be recognized or enforced by this Board. During the suspension of a member, no such report shall be required.

All claims of members and non-members against said delinquent member must be filed with the Secretary of the Board within thirty days after he has been reported, and must be accompanied with a detailed statement of the account.

No claims, unless so filed, shall ever after be recognized or enforced by this Board.

ARTICLE XXVI—Preferred Indebtedness.—When a member of this Board fails, and is re-admitted to his seat, all subsequent accruing indebtedness shall be considered preferred.

ARTICLE XXVII—Sale of Dividends.—No purchases or sales of dividends will be permitted at the Board.

ARTICLE XXVIII—Interest on Dividends.—In all sales, dividends declared after the sale, and before the payment and delivery, shall go to the purchaser.

When the seller draws the dividend on Stocks sold on time contracts, the amount of said dividend shall be deducted from the price of said Stock, and the deposits made accordingly.

Should a Stock upon which a dividend has been declared be delivered whilst the transfer books of the Company are closed, the purchaser shall have the right to deduct the dividend.

When Mining Companies make Stock or Scrip dividends, the Stock or Scrip so divided shall go with the original Stock for ninety days from date of distribution.

The accrued interest on all Stocks and Bonds, not especially excepted in the By-Laws, shall go to the purchaser.

ARTICLE XXIX—Assessments.—In all sales of Stocks, whether on time or for cash, the buyer shall pay any assessments levied and not delinquent at time of sale; provided, that the levying of such assessment by any Company shall have been previously announced by the

Presiding Officer in open Board; but no assessment, whether payable instant or otherwise, shall be considered delinquent until thirty days from the day on which it is levied.

Where an assessment is levied on a Stock and made payable monthly, or at different periods, in installments, each payment shall be governed by this Article, and become delinquent as follows: The first payment in thirty days from the date of levy; the second, in thirty days from the day on which it is made payable; the third, the same, and so on. The day on which an assessment is levied is not counted as one of the thirty days.

ARTICLE XXX—*Rescinded Assessments.*—On all time sales of Stock after an assessment becomes delinquent, and is thereafter rescinded, the buyer may, upon delivery, deduct the amount of said assessment from the contract price of said Stock.

ARTICLE XXXI—*Charges on Stock advertised for Assessments.*—The seller of Stock shall pay all the charges for advertising delinquent assessments, etc., pending the settlement of time contracts.

ARTICLE XXXII—*Limitations for Reclamation for Assessment of Stock.*—No reclamation for unpaid assessments upon Stock sold by members of this Board, the transfer office of which is in this city, shall be allowed, unless the same is presented within five days from the date of delivery; and when the transfer office is out of the city, the demand must be made within twenty days from the date of delivery.

In the event of Stock which has been sold for assessment being delivered in error, the broker receiving it shall be entitled, within five days from the date of delivery, to demand transferable Stock in lieu thereof; and in case such demand is not made within five days, then the broker who delivered the Stock may settle with him by returning the amount which he paid for the Stock.

No reclamation for any Stock delivered shall be made after the expiration of thirty days, if the transfer office is in the city; and not after sixty days, if the transfer office is out of the city.

ARTICLE XXXIII—*Appropriations.*—No appropriation of any moneys for any person or object whatever, other than ordinary expenses of the Board, as provided by the Constitution and By-Laws, shall be made, unless two-thirds of the members present shall by vote concur therein. Notice of any such appropriation shall be made in writing, and shall lie over one day, and vote thereon shall be by ballot.

ARTICLE XXXIV—*Regulating Commissions—Penalty.*—No member of this Board shall transact any business as a stock broker upon commission at less than $\frac{1}{4}$ per cent., except for another member, when the commission shall not be less than $\frac{1}{8}$ of 1 per cent. Nor shall any member be permitted to avoid the effect of this By-Law in either of the aforesaid cases by means of any rebate, deduction, or allowance; not charging commission on joint Stock transactions or on all purchases or sales in every account, whether on behalf of members or non-members, or in any other manner whatever, susceptible of proof to the satisfaction of the Board of an intention, either directly or indirectly, to evade its provisions; provided that no member shall be compelled to charge commission where the occasion of or the service rendered is of an exceptional or casual nature.

Whoever shall violate this By-Law shall be subjected to the following penalties, and there shall be no power in the Board or its officers to modify or remit any part thereof, except by a vote of two-thirds of the members present: For the first offence, a fine of five thousand dollars, in United States gold coin, shall be imposed, the amount thereof to be equally divided between the complainant and the Trust Fund. The party convicted shall be suspended from all the privileges of the Board until the fine be paid. If the fine shall be not paid within one week from the date of its being imposed, the suspended member shall be considered as delinquent to the Board in the amount thereof, and subject to all the provisions of Article 13 of the Constitution, and Article 25 of the By-Laws, respecting suspended members and the filing of claims against the same, and the amount of said fine shall be deemed as preferred indebtedness over any and all claims which may be presented against the seat of said delinquent.

Upon all second or more convictions under this By-Law, in addition to the penalty already prescribed as aforesaid, and which shall be similarly applied, the offending member, if the said fine be paid at any time before his seat shall have reverted to the Board, shall be suspended for one month after such payment from all his rights of membership. No member, however, shall be deemed to have lost the right of participating in the benefits of the Trust Fund by reason of any conviction or penalty imposed under this By-Law until the forfeiture of his seat shall have been accomplished through the operation of Article 13 of the Constitution.

The President shall appoint a committee of three members, to whom complaints for infringement of this By-Law shall be made. Said committee shall investigate the same under oath, and decide by ballot as to the guilt or innocence of the accused, and report the result of said investigation to the Board.

ARTICLE XXXV—*No Business before Calling Stocks.*—Except by unanimous consent, no business shall be transacted previous to calling Stocks.

ARTICLE XXXVI—*Communications having a tendency to Influence the Market.*—No letters or communications having a tendency to influence Stocks shall be read publicly at the Board, without first being presented to the President.

All communications addressed to the Board, affecting the state of the Mines or Mining Stocks, shall be read instant.

ARTICLE XXXVII—*Receipts and Deliveries must be made between Members.*—All receipts and deliveries required by the purchase and sale of shares of Stock, must be made directly between the members of this Board; and any member who shall, in completion of such Stock transactions, either receive the Certificate from or deliver them to any person other than a member of this Board, shall be fined five hundred dollars for the first offense, and for the second shall be expelled.

ARTICLE XXXVIII—*Penalty for Employment of Non-members.*—No member of this Board shall employ, directly or indirectly, a non-member to buy and sell Mining Stocks dealt in at the Board, under a penalty of one thousand dollars for each offense.

ARTICLE XXXIX—*Using Indecorous Language—Punishment.*—Any member who shall be guilty of indecorous language or conduct during the session of the Board, shall be fined not less than five nor exceeding one hundred dollars, or shall, by a vote of two-thirds of the members present, be suspended from his seat for not less than one week nor more than one month; and a repetition of the offence shall subject the party so offending to expulsion, and he shall not again be admitted unless by consent of two-thirds of the members present.

A fine of five dollars shall be imposed upon any member who shall stand upon the desks or chairs in the Board-room, either during the session of the Board or after.

Smoking shall not be allowed in the Board-room. Any member violating this rule shall be fined twenty-five dollars.

ARTICLE XL—*Fine for Non-attendance at a Special Meeting.*—When a special meeting of the Board shall be called, the fine for non-attendance may, by a vote of two-thirds of the members present, be increased to a sum not exceeding five dollars.

ARTICLE XLI—*Neglect to Pay Fines for three months—Penalty.*—Any member who shall absent himself from the Board, and omit to pay his fines for a period of three months, may be declared no longer a member. A list of members delinquent for fines shall be furnished the Sergeant-at-Arms, and he is ordered to refuse admittance to the Board-room to all members who fail to pay their bills before the 21st of each month. The Secretary shall notify delinquent members to this effect.

ARTICLE XLII—*Access to the Minutes.*—No person shall have access to the minutes of the Board except the members and their clerks.

Clerks admitted to the business sessions of the Board are prohibited making abstracts and duplicate lists of sales for other than their employer.

ARTICLE XLIII—*Black List.*—Each and every member shall report publicly to the Board the name of every person who shall violate his engagements with him as a broker, after employing him to execute business on commission, or who shall have refused satisfactory settlement of any contract made with or by said broker on his account; and it shall be the duty of the Secretary to keep a book for the purpose of registering the name of every person reported as a defaulter (together with his address), and the name of the broker who shall complain, there to remain until the debt that may have accrued through the medium of the member, in his capacity as a broker, be liquidated. So long as the name of said defaulter or defaulters continue registered upon the books of the Board, no member shall execute or cause to be executed any business for him or them, under pain of immediate suspension.

Suspended members, who have not settled, are subject to the above penalties.

ARTICLE XLIV—*Arbitration of Claims of Non-members.*—Any person not a member of the Board shall have the right to bring a claim against a member of said Board arising from any transactions in Stocks, or money loaned during his membership, on the conditions following, and not otherwise:

The person making such claim shall execute a full release of his claim against said member, duly signed, and shall deliver the same to the President, to be held in trust to abide the event of the suit before said Board.

The President shall keep the said release in trust, to abide the result of said suit, and shall deliver the same to the defendant, on the happening of either of the three following events:

1st. In case the claimant shall not present his claim to the Board within twenty days after executing said release.

2d. In case judgment shall be rendered for said defendant by the Board.

3d. In case the defendant shall pay, or offer to pay to such claimant the amount of judgment rendered in favor of said claimant.

In case judgment shall be rendered against any member of the Board which he is unable or unwilling to pay, then such release shall be canceled and returned to such claimant.

Form of Release.—Know all men by these presents: That I, _____, for and in consideration of the sum of one dollar, to me in hand paid by _____, the receipt of which is hereby acknowledged, have remised, released, and forever discharged, and by these presents I do hereby remise, release, and forever discharge the said _____ of and from any and all demands heretofore existing and due and owing to me, and the said _____ is hereby fully released and discharged from the same.

Sealed with my seal, and dated San Francisco, this _____ day of _____, 187 _____.

ARTICLE XLV—*Regarding Suspension of Members and Legal Proceedings.*—In all cases where, and in accordance with the provisions of Article XLIV of the By-Laws, a judgment has been or shall be rendered against any member of the Board by the Board, such member shall, without further action of the Board, stand suspended from the time of the rendition of such judgment until the same is fully paid or satisfied, or tendered and refused.

Whenever any creditor of a member of this Board, or any person asserting a claim against a member of this Board, has voluntarily, or shall voluntarily, resort to any legal tribunal, or has voluntarily instituted, or shall voluntarily institute, any legal proceedings against such member concerning his claim, such claim shall not be recognized or enforced by this Board.

ARTICLE XLVI—*Prohibiting Connections and Transactions with Similar Organizations.*—All members of this Board shall cease all partnership connections in any way with members of any similar organization; and also cease executing orders, either directly or indirectly, through clerks or otherwise, in any similar organization, under penalty of suspension.

ARTICLE XLVII—*Providing a Safeguard between Brokers and their Clerks.*—First—All clerks and employees of the members of this Board shall be registered in a book provided for that purpose by this Board—said book to be open to the inspection of members only.

Second—Any member of this Board trading with a clerk or employee of any other member of this Board, after said clerk or employee has been registered in accordance with Section 1 of this By-Law, and not reporting his transactions with said clerk or employee to his employer before the next session of the Board, shall, for the first offense, by a majority vote of the members of this Board, be suspended from and deprived of all his rights and privileges as a member of this Board for the period of thirty days, and fined in the sum of five thousand dollars (\$5,000), said suspension to continue until the fine is paid; and for the second offense under this rule, shall be expelled.

Third—Like penalties shall be imposed on any member of this Board doing business for any other member of this Board suspended under this Resolution.

Fourth—All fines collected under this Resolution shall be placed to the credit of the Insurance Fund of this Board.

Fifth—It shall be the duty of all members of this Board to report immediately all changes in the clerical department of their business.

Sixth—The Secretary of the Board shall furnish each member with a printed copy of said book in which the names are registered, and shall report to the members all changes in the clerical force as reported to him.

Seventh—Brokers' clerks shall not be allowed to trade on the floor of this Board.

ARTICLE XLVIII—*Moneys due Trust Fund.*—The amounts due to the Trust Fund by the forfeited and suspended seats of members of the Board shall be paid out of the General Funds, and charged to each seat respectively.

ARTICLE XLIX—*Reports of Arbitrating Committees.*—All committees appointed to investigate claims against Brokers are required to report within five days from date of appointment.

ARTICLE L—*Bids and Offers confined to Members.*—The bids or offers for the purchase or sale of shares of stock shall, during all sessions of the Board, be exclusively confined to members thereof, and anything contained in these By-Laws conflicting herewith is hereby rescinded.

ARTICLE LI—*Tickets of Admission.*—Section 1. Tickets of admission of visitors of this Board shall have the following printed on the backs of said tickets:

"This ticket is issued on condition that the holder thereof will abide by all the rules and regulations of the San Francisco Stock and Exchange Board, and for any violation thereof the Board reserves the right to cancel the same, and deny the holder admission to the rooms of the Board."

Section 2. None but ticket holders shall be admitted to the Board-room, and no person whatever, excepting members or employees of the Board, shall be permitted to enter within the railings on the floor of the same during any of its sessions.

Free admission for ladies and their escorts to the galleries of the Board-room shall only be granted by cards issued by members.

RULES OF ORDER

FOR EXECUTIVE SESSIONS OF THE SAN FRANCISCO STOCK AND EXCHANGE BOARD.

Rule 1. The President shall call the Board to order. Each member shall take the seat usually occupied by him during the regular sessions of the Board, and remain uncovered while present at the meeting. In all discussions arising, the President shall not participate, but, wishing to do so, shall call some other person to the Chair.

Rule 2. The order of business shall be as follows:

1. Calling the roll.
2. Reading and approving minutes of preceding meetings.
3. Reports of Committees.
4. Motions, resolutions and notices.
5. Unfinished business of preceding meetings.

Rule 3. All questions relating to priority of business shall be decided by the President without debate.

Rule 4. When any question is before the Board, no member shall speak more than twice without permission from the President, nor shall any member interrupt another while speaking.

Rule 5. Substitutes may be offered at any time when an amendment is in order, and when adopted shall be open to amendment. Substitutes and amendments must be germane to the subject matter under consideration, but not more than two amendments shall be entertained to any motion at the same time.

Rule 6. Any member may call for a division of the question when the sense will admit.

Rule 7. When a question is under debate, no motion shall be received but the following :

1. To adjourn.
2. The previous question.
3. To lay on the table.
4. To postpone indefinitely.
5. To postpone to a day certain.
6. To commit.
7. To amend.

They shall be put in the above stated order, and the first four shall be decided without debate.

Rule 8. The previous question may be called for by two members, if seconded by a majority, and shall be put in this form: "Shall the main question now be put?" If carried, all amendments not already adopted shall be precluded, and the main question taken without further debate.

Rule 9. No motion shall be debated until the same be seconded and distinctly announced by the President, and it shall be reduced to writing if desired by the President or any member, and read by the Secretary, before it shall be debated. A motion may be withdrawn at any time before amendment.

Rule 10. Every member, when he speaks shall, standing in his place, address the President, and when he has finished, shall sit down.

Rule 11. When two or more members rise at once, the President shall name the member who is to speak first.

Rule 12. When a member shall be called to order, he shall sit down until the President shall have determined whether he is in order or not. Every question of order shall be decided by the President without debate, unless so invited by him, subject to an appeal to the Board by any member.

Rule 13. When the ayes and noes shall be called for by three members, every member present shall declare openly and without debate his assent or dissent to the question.

Rule 14. When a question has been once put and decided, it shall be in order for any member, voting in the majority, to move for the reconsideration thereof at the same meeting, or give notice of his intention of so doing at the next; but no question shall be reconsidered more than once.

Rule 15. The proceedings of the Board shall be entered on a journal as concisely as possible.

Rule 16. No action of the Board shall be rescinded without the concurrence of two-thirds of the members present.

Rule 17. The President shall have the right to name any member to perform the duties of the Chair, who is hereby vested, during such time, with all the powers of President. Such appointment shall not extend beyond adjournment.

Rule 18. Whenever an executive session shall have failed for want of a quorum, a fine of one dollar shall be imposed upon every absent member. Absence from the city, or sickness of self or family shall be considered sufficient excuse for remission of the above fine.

Rule 19. Any ruling of the Chair may be appealed from by a member. The question on the appeal shall immediately be put in the following terms: "Will the Board sustain the ruling of the Chair?" It shall be open to debate, and decided by a majority vote of the members present, but the decision shall not be subject to re-consideration.

Rule 20. The "Rules of Order" may be altered or amended, after one week's notice in writing shall have been given, specifying the proposed alteration or amendment; but any one of them, or any clause thereof, may be suspended for the time being by a vote of two-thirds of the members present.

PACIFIC STOCK EXCHANGE.

Very much which has been said, as to the objects to be attained by the organization of the San Francisco Stock Exchange Board, will apply equally well to the Pacific Stock Exchange—with this difference, however: the former can point to a longer record of fulfillment than the latter. The members of the Pacific Stock Exchange are no less honorable than those of the San Francisco Board, nor are they individually less generous. They offer to the prospector and the dealer in mining securities the same advantages that are extended to them by the former. They are contributing their full quota to the growth and development of the great mining interests of the coast, and are helping most generously to extend the blessings of civilization into the wilderness by the encouragement they offer to those who push out into the unknown in search of treasures, and ply the pick in bringing them to light.

FINANCE COMMITTEE.

G. FRANK. WM. EDWARDS. LEON WEILL.

COMMITTEE ON MEMBERSHIP.

F. W. BAÇON. P. J. G. KENNA. THOS. WHITELEY.

STOCK LIST COMMITTEE.

JAS. J. T. HAWKINS. R. C. TOBIN. T. C. SANBORN.

COMMITTEE ON REVISION.

P. S. FAY. H. W. PLUMMER. JNO. SEDGWICK.

MEMBERS.

Baldwin, E. J.]	Flat, C. J.	Kelley, Geo. W.	Smiley, T. J. L.
Bacon, F. W.]	Frank, Gustave	Kyle, R. G.	Speyer, Leo.
Baldridge, Mich'l	Franks, Fred.	Lederer, Geo. M.	Starr, J. D.
Bourne, J. B.]	Gardiner, Baldwin	Lent, Wm. M.	Taylor, W. S.
Berryman, F. A.]	Gauthier, Eugene	McDonald, James M.	Tilden, Jos.
Baird, Andrew	Griesinger, Robert	Montalegre, Juan G.	Tobin, R. C.
Boyd, J. F.]	Greene, C. M.	Morgan, W. P.	Walcott, A. F.
Colman, M.]	Harris, T. H.	Moulder, Andrew J.	Webb, A. H.
Dodge, Geo. S.]	Hawkins, J. J. E.	Moroney, Paul	Webber, Mack
Duncan, Wm. T.]	Henriques, D. M.	O'Connor, Thos.	Weller, Chas. L.
D'Oyly, Nigel	Hoitt, Ira G.	Otis, Stephen	Whiteley, Thos.
Edwards, Wm.]	Hunt, J. L.	Phipps, A. B.	Wood, H. P.
Eppstein, F. J.]	Hutchinson, J.	Plummer, H. W.	Wood, W. E.
Elliott, F. A.]	Kaufman, S.]	Rieh, David	Wolf, F.
Ely, George	Kent, R. F.]	Sanborn, T. C.	Wright, Wm. H.
Fay, Phillip S.]	Kenna, P. J. G.]	Sedgwick, John	Weill, Leon

Officers of Pacific Exchange.

CHAS. L. WELLER.....PRESIDENT. NIGEL D'OYLY.....VICE-PRESIDENT.
ANDREW J. MOULDER.....SECRETARY. DAVID RICH.....TREASURER.

DIRECTORS.

CHAS. L. WELLER. NIGEL D'OYLY. DAVID RICH. A. B. PHIPPS.
THOS. WHITELEY. GEO. W. KELLEY. FRED. FRANKS.

COMMITTEE ON BUILDING.

D. RICH. N. D'OYLY. THOS. WHITELEY.

COMMITTEE ON ACCOUNTS.

A. B. PHIPPS. FRED. FRANKS. GEO. W. KELLEY.

THE CALIFORNIA STOCK EXCHANGE BOARD.

Some idea may be formed of the immense amounts of mining Stocks which exist in the country west of the Rocky Mountains by glancing through the long list of mines, to be found in another part of this work. It is true, all these companies are not fully organized, but by far the greater number are at work and have more or less stock abroad in the community. The quantities of these stocks which are bought and sold may be estimated from the recorded accounts of the transactions of the Board of Exchange. Yet the names of the mines whose stocks are called in the Boards are but few compared with the whole number of incorporations. The fact is, we of the coast are a stock-dealing people, and demand great and continually increasing facilities for the transaction of business in this line. The necessities which led to the organization of the first Exchange Board are detailed elsewhere, as is also the amount of work it has accomplished. The following account of the organization of the California Stock and Exchange Board is not devoid of interest, nor is it without its bearing on the general subject:

In January, 1872, just after the bonanza in the Crown Point and Belcher mines had been developed, a number of gentlemen determined to try again the experiment of establishing another Board of Brokers in San Francisco. There existed an apparent necessity for its establishment, for there was at that time more business in the stock-dealing line than could be transacted through the San Francisco Stock and Exchange Board. During the day, and especially between Boards, the street was filled with anxious buyers and sellers, all clamorous for bargains.

The originators of the California Board were forty in number, many of whom were brokers of experience, having had connection with similar organizations before. The forty charter members were John Middleton (since deceased), T. J. L. Smiley, Jackson McKenty, S. Barrell, S. Hyncman, W. W. Lawton, M. D. Townsend, W. H. Wright, H. S. Fitch, Chas. L. Weller, E. L. Smith, A. C. Chick, Joseph Klopenstine, Joseph de Sta. Marina, H. C. Logan, M. Rudesdale, J. P. Cantin, W. H. Brown, Wm. Jay Smith, T. J. Poulterer, T. C. Sanborn, J. F. Crossett, A. Diffot, R. F. Kent, F. Wolf, E. S. Tibbey, R. Broderick, E. J. Baldwin, C. C. Harvey, W. J. Williams (since deceased), J. B. Bourne, J. R. Maxwell, Louis Laconr and J. Tilden.

The Board so organized provided for a membership of seventy, and the remaining thirty seats were rapidly taken. At the organization T. J. Poulterer was elected President; T. J. L. Smiley, Vice-President; W. W. Lawton, Secretary; E. J. Baldwin, Treasurer; James Tilden, Caller, and John Gray, W. J. Williams, and Joseph Tilden, Members of the Executive Committee.

The first session was held February 1st, 1872.

Business subsequently increased very rapidly, and the transactions of the Board attracted general attention. After a short term of service, Mr. Poulterer resigned the office of President, and was succeeded by Mr. Smiley, who held the office till April 1st, 1876.

After the organization was completed, the number of seats in the Board were reduced to sixty-two, the present number. The prosperity of the Board is evidenced by the fact that, during the first year of its existence, the sales amounted to \$16,000,000. Seats increased in value until, in April, 1875, \$2,000 was offered and refused. The total sales up to this date amount to over \$80,000,000.

At the organization of the Pacific Stock Exchange, twenty-six of its most active members were drawn from the Board into what promised to be the more powerful body, and others afterwards followed. This was, of course, a severe blow to the organization, but it has survived it. The vacant seats were readily filled, and the career of its usefulness continued. When the Bank of California suspended, it was the only Board to continue its daily sessions and transact its regular business through the dark and trying times which followed. The consequence has been a greatly increased amount of business, the unlimited confidence of the people, and many responsible applicants for membership.

The Constitution and By-Laws of the California Stock Exchange Board are nearly identical with those of the San Francisco Stock and Exchange Board, to which the operator is referred. The cost of listing a mine upon this Board, however, is only \$100 once, and an annual renewal fee of \$25.

Officers and Members of the California Stock Exchange Board.

J. L. ARMSTRONG.....	PRESIDENT	T. E. LUTY.....	VICE-PRESIDENT
G. E. CARTER.....	SECRETARY	JOHN GRAY.....	CHAIRMAN
GERMAN SAVINGS BANK.....	TREASURER	P. CROWLEY.....	SERGEANT-AT-ARMS

EXECUTIVE COMMITTEE.

A. C. WIGHTMAN.	H. H. BURLING.	ROBERT CORDS.
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MEMBERS.

Aiken, Charles	Green, J. J.	Klewisch, J. O.	Reynolds, Thomas
Armstrong, J. L.	Hart, H. H. H.	Lammon, George	Rychman, Wm. L.
Baldrige, J. E.	Harvey, C. C.	Lebatard, M.	Sparks, I. C.
Buell, Charles S.	Hayhoe, J.	Luty, F. E.	Sperling, M. E.
Carter, G. E.	Herrera, F.	Marina, J. De Sta.	Sweet, H. A.
Conger, C. C.	Hirshfield, C.	McDonnell, J.	Todd, A. H.
Cords, Robert	Hoare, Charles	McGrew, A. F.	Warren, S. P.
Downing, H. C.	Howell, S. S.	Page, J. P.	Westheimer, J. F.
Frank, Samuel	Hyneman, S.	Priece, B.	Wightman, A. C.
Garish, August, Jr.	Jewell, J. G.	Rea, A.	Yeazell, A. H.
Gray, John	Kahn, S.	Rea, C. T.	

The Board occupies very handsomely fitted-up quarters, on Leidesdorff Street, in the very heart of the stock-dealing district.

BIOGRAPHICAL SKETCHES.

JOHN W. MACKAY.

The notable subject of this sketch—the youngest member of the Mackay-Flood-Fair combination—was born in Dublin, Nov. 28th, 1835, and therefore is on the sunny side of forty-three. He came to America a mere lad, and for some years found employment in the office of Wm. H. Webb, the famous ship-builder of New York. In the Fall of 1852, he joined a party bound for California, and, about the close of that year, he reached his destination, having made the passage in a vessel built by his former employer. Young Mackay immediately engaged in placer mining at Alleghany, Sierra County (Cal.), where moderate success rewarded his efforts. He did not drift into mining, and delve among the rocks and sand, as a make-shift, as was the case with a majority of those who arrived here in the golden age. He entered mining as a profession. He entered mining to stay, and he did stay. He did not have luck above that of other men. On the contrary, when we average the early events of his mining career, we find that he had his full share of misfortune. He did not lose a fortune in those early days, for a reason that readily suggests itself to the reader; but this fact did not prevent him from undergoing many of the privations incidental to a mining career in less recent California and Nevada. Fortune smiled slightly on Mr. Mackay while he was working the placers in Sierra County. It was a sickly sort of smile. Still it was a smile, and the result

was, he secured sufficient money to proceed to Virginia City (Nev.), and inaugurate an enterprise of his own. In connection with Kinney Said, he started a tunnel in what was then known as the Union ground, north of the Ophir mine. Here Fortune frowned on him. His funds were speedily exhausted, as a matter of course, and once more he started for a competency. He made his brawny arms earn him four dollars a day as a timber-man in the Mexican mine. He also swung a pick and shovel in the mines at a similar rate of remuneration. His ideas of wealth were very moderate in those times. There was no limit to his ambition, if we are to accept the narratives of his old comrades; but his chief desire was to accumulate \$25,000 for the purpose of soothing the declining years of a beloved mother. This desire affords a good index to the man's character. He is just the kind of man to express such a desire. His fidelity and rugged integrity are as prominent to-day as they were when he worked for wages and earned all that he received. It is pleasant to speak well of one's fellow-man under almost any circumstances; but it is doubly pleasant to do so when you feel that you are telling plain facts. Mr. Mackay's early life in the mines affords texts for interesting and instructive homilies; but a deference to the natural modesty of the man forbids any literary embroidery. The first substantial start made by Mr. Mackay was in connection with the Kentuck mine, in Gold Hill. After many changes of fortune, he became interested with J. M. Walker (brother of ex-Governor Walker of Virginia), in 1863. This firm was enlarged by the addition of Messrs. Flood & O'Brien in 1864, and so continued until 1868, when Mr. Fair took the place of Mr. Walker. The first few hundred thousand of the now stupendous wealth controlled by this firm was made during their control of the Hale & Norcross mine, in 1865-6-7. The career of Mr. Mackay, since that time to the present, has been chiefly noticeable for the active part he has taken in the incessant and successful efforts made by the partners to obtain further acquisition of territory on that marvelous deposit of ore known as the Comstock Lode. Backed by their constantly increasing capital, their efforts have resulted in opening to the world the wonderful Consolidated Virginia and California, known as the "Bonanza" mines. On the 25th of November, 1867, Mr. Mackay married a most lovely and accomplished lady, the daughter of Colonel Daniel E. Hungerford, of the Army. They have two children to brighten their household. Mr. Mackay has made his home at Virginia City, and during most of the time, since the discovery of the bonanza, he has largely directed the destinies of the firm, in which he has a three-eighths interest. His decision of character, his shrewdness, his application, and, last but not least, his personal popularity, have largely contributed to the renowned success of what is known as the bonanza combination. He is one of the few men whom fortune has not spoiled. He has stood the test well. His liberality has again and again placed old friends in affluent positions. We could illustrate this generous nature by numerous statements of facts within our knowledge—facts that would absolutely startle the world. But the limits of this book would not compass the illustration. In deference to Mr. Mackay's feelings, and with a proper regard for the proprieties, we abstain from giving details. Whether at his mansion in Paris, or in the dripping depths of the mines, he is the same quiet, manly, unostentatious John Mackay. At present writing, Mrs. Mackay resides in the French capital, where the children are being educated, and where, it will be remembered, she aroused the national pride of Americans by entertaining the late Chief Magistrate of the United States in princely style. In closing our sketch of Mr. Mackay, we may remark that the gentleman is of Herculean build, easy of carriage, and has a genial presence. He looks the man he is—the prince of miners and boss of the big bonanza.

We cannot dismiss the subject of this sketch without making a plain statement for the benefit of those who are not familiar with the discovery of the great bonanza. There is a popular idea—though a very erroneous one, by the way—that the bonanza discovery was simply a piece of luck; such luck as might befall any miner. The circumstances that preceded this discovery are overshadowed by the importance of the find itself. How many people realize the difficulties attending the search for this marvelous body of ore? The answer is very faint. Why, when Mr. Mackay and his associates inaugurated their search for the bonanza, the ground involved in their prospecting operations had been abandoned by Mr. Saaron and other large operators. Mr. Mackay did not begin work with the definite knowledge that he was bound for a bonanza. By no means. Here, in a nutshell, is what occurred: Believing in the richness of what is now the bonanza territory, Mr. Mackay and his associates purchased the controlling interest in the corporation then owning the ground, and began the hunt for the ore body. The tax upon the patience, endurance, and skill of the bonanza people can barely be imagined. They paid out not less than \$500,000 (and at a time when that sum was more to them than \$50,000,000 is to-day), to carry on this prospecting operation. Prominent men in the district, who had succumbed to discouragements, looked with disfavor on the work being done by Mr. Mackay and his partners. It would not pay for the trouble and expense. That famous drift from Gould & Curry through Best & Belcher, and into the old Virginia ground, was run over 1,200 feet before it made the strike that gave the bonanza to the world. What trials and tribulations, what heart-aches, what hopes and fears, were involved in that drift, we may never know. That the drift was under the best of management, however, has always been an acknowledged fact. The results of that management have made an imperishable impression. And to John W. Mackay, in particular, that impression owes its existence to-day. He led the forlorn hope.

JAMES C FLOOD.

James C. Flood was born in New York city, about 1826, and is now in his very prime. His early education was most practical in its character. He did not enjoy the benefits of a collegiate career, but the instruction he received in the ordinary English branches was systematic and thorough. In 1849 he took passage for California in the ship "Elizabeth Ellen." His brains constituted his sole capital. He had no rich or influential friends to lend him a helping hand. What he is to-day, he owes to himself. In 1854 he associated with the late W. S. O'Brien, and the famed firm of Flood & O'Brien was formed. Concerning the subsequent career of Mr. Flood, we quote the following sketch from the San Francisco *News Letter*:

The first notable enterprise engaged in by Flood & O'Brien, consisted of operations in the Kentucky and other mines on the Comstock, in which they generally contrived to secure a controlling interest. This was as early as 1862. Their operations in Hale & Norcross, a few years after, were on a scale so large as to attract general attention to them as mining speculators. But the operation which finally made the name of this mining firm known throughout the world, has been compressed within the short space of a few months in the early part of 1875. The existence of those vast bodies of ore in the Consolidated Virginia and California mines, which gave them the name of *bonanza*, thus adding a permanent word to the English language, was suspected as early as February, 1874, and were made certain by the proprietors in December of that year. The generosity with which they dealt with those who had the good fortune to be their friends, is now generally known in this community. They were not content to see their own fortune growing with colossal strides each hour, but desired all who had been kind to them in the past to accompany them on the road to prosperity. Many of our wealthiest people of to-day, if we thought proper to name them, would confess that to the fortunate circumstance of their good relations with Flood & O'Brien in years gone by, they alone attribute their being rich instead of poor. The establishment of the Nevada Bank is the idea of Mr. Flood, who has resolved that his bank shall grow up in San Francisco, sound in capital, and with a reputation throughout the world, that shall be built upon genuine merit. In appearance Mr. Flood is prepossessing, strong, and about five feet ten inches high, compactly built and robust form. His complexion is a healthy blonde, with a serious but pleasant demeanor, and a grave and sedate carriage, befitting the earnest nature of the man. It has been remarked by thoughtful men to whom Mr. Flood has been known from youth, that all he is now was foreshadowed in him from the first; that whatever situation he was placed in for the moment, he was always equal to, and performed his part in a grave, quiet and thoughtful manner, marked rather by force held in reserve than by that actually employed. His bearing towards others was always that of the inborn, natural gentleman, invariably courteous and gentle to all, and never failing to receive like consideration from those he met; inherently confident of his own position, never dreaming that it could be questioned by anybody. And this was in no respect more marked when occupying the humblest position that chance has imposed upon him, than now that he is one of the heaviest capitalists of America.

The foregoing paragraph is correct, as far as it goes, but it does not tell the whole story. The account was published many months ago, and since its appearance, Mr. Flood has become one of the leading financiers of the age. His power of mental concentration, his quickness of perception, and his great liking for finance, have combined to make him the financier of the great bonanza firm. Those who know the gentleman best, and, at the same time, are competent to form a correct estimate of Mr. Flood's capacity, place him in the front rank of the world's financiers. He is a persistent and intelligent student of financial history, and keeps himself thoroughly informed on the progress of finance. It is almost superfluous to remark that Mr. Flood is an incessant worker during business hours. He is, however, devotedly attached to the home circle, and his surroundings are of the most pleasant character. He spends the Winter months at his plain and unostentatious residence on Eddy street, but the Summer nights are passed at San Mateo, where Mr. Flood has one of the most attractive country seats on the Pacific Coast. Mr. Flood's family consists of a wife and daughter, who are at home just now, and a son about twenty years of age, who is traveling around the world in company with Dr. G. D. B. Stillman, the distinguished physician. This sketch might be greatly amplified, if the importance of the subject were the sole consideration, but we have given all the facts in which the public are interested, and that must suffice for the present.

JAMES G. FAIR.

The subject of this sketch is best known to the general public as a member of the Bonanza firm. But among miners and mining men he is accorded rank as one of the most accomplished mining engineers America has ever developed; and there are experts, traveled and experienced gentlemen, who do not hesitate to say that in the mechanical management of colossal mining enterprises Mr. Fair has no peer. He was born December 31, 1831, in Clougher, Tyrone County, Ireland, and came to this country in 1843. He attended school at Geneva, Illinois, for several years, and subsequently secured a good business education at Chicago. In common with other adventurous spirits, Mr. Fair was infected with the gold fever in 1849, and in August of that

year he arrived at Long's Bar, Feather River, California. He mined on the bar for a while, but failed to strike a profitable placer. It was natural that he should turn his attention to quartz mining. Placer mining was conducted in a primitive style in those days, and did not afford Mr. Fair fitting opportunities for the exercise of his peculiar mechanical genius. From the placer bar to the quartz mine was an easy transition for him. We next hear of his being engaged in quartz mining at Angels, Calaveras County, California. And at a later period he figured as the superintendent of quartz mines in other California counties. Even in the early days he ranked high as a professional miner. In 1855, Mr. Fair assumed the Superintendency of the Ophir mine, and in 1857 the Hale & Norcross came under his direction. During their connection with the latter mine the Bonanza firm secured the first half million of their princely fortune. The idea then occurred to Messrs. Flood and Fair, of the then moderately successful and comparatively unknown firm, to obtain control of what was then known as the California and Sides mine, the White and Murphy, the Central (Nos. 1 and 2) and the tract known as the Kinney ground. The claims were eventually secured, and to-day form the famous Consolidated Virginia and California mines. The action of the firm in regard to their efforts to obtain control of these particular claims was predicated, we believe, almost entirely upon the opinion and theories of Mr. Fair, in whose unerring judgment and remarkable knowledge of everything connected with mining matters, his *conferrers* relied upon implicitly. The result of this gentleman's predictions and calculations are familiar to every one in our midst. The life of Mr. Fair, since the immense wealth of the great mines poured into his lap, has been that of any sagacious capitalist of vast means. He began speculation in real estate in this city sometime in 1858 or '59, and owns nearly seventy acres in different parts of it. Now this property is of itself a colossal fortune. A short time ago Mr. Fair contracted the rheumatism in the depths of the Bonanza, and in order to ensure a speedy recovery, he resigned the Superintendency of the Bonanza and other mines, and took the rest which his medical advisers prescribed. Mr. Fair's robust constitution speedily shook off the disease, and his health is now up to its usual high standard.

Mr. Fair has purchased the elegant residence of Hon. Milton S. Latham, (Menlo Park) valued at little less than one million dollars, and he has also secured an elegant and spacious residence lot on the summit of California street hill. In person Mr. Fair is about the medium height, strongly and compactly built, and with his alert carriage and handsome face presents an exceptionally striking appearance. He has a devoted wife and four interesting children. His present home is at Virginia City.

HON. WILLIAM SHARON.

A biographical sketch is more interesting, and more profitable to the reader, when it presents those characteristics and qualities which serve to make its subject appear the exemplar of his fellow-men. Nothing incites man to the performance of noble deeds more than the record of noble deeds performed. A character distinguished for pertinacious effort, for persistency of purpose, for unswerving integrity, for skillful management of his own or public affairs, for a will to do and a mind to dare, unmoved by disaster, and resolute under the most trying vicissitudes, is not so common that the public will be found indifferent to it.

Our subject is reported to have been born in the State of Ohio. When a young man we knew him as an attorney-at-law, in the State of Illinois, manifesting a bent toward the mercantile business (in which his brother was then engaged), rather than to the profession for which he had received his education.

In 1849 he came overland to California, and at once took in the possibilities of making a fortune as an operator in real estate in San Francisco. The records of the county from 1850 to the present day show an extent and magnitude of his transactions unequalled by any one operator in the city of San Francisco. In 1863 he was induced to take the agency and general supervision of the Bank of California in Gold Hill and in Virginia City, State of Nevada. At about the end of the first year of his agency and management of these branch banks, Mr. Ralston paid him a visit. This visit happened at one of the periods of *darkness* on the Comstock. This great silver and gold producing belt was in eclipse. The ores of the Virginia and Gold Hill mines had suddenly ceased to be remunerative. The mills in great number were unsupplied with ore, and out of employment. The prospect seemed very discouraging and unpromising. Mines of silver which had been regarded as interminable in their endurance and extent downwards, to the consternation of all had ceased to be remunerative or profitable to work. To the quick perceptions of Mr. Ralston, the loans in large sums upon these properties seemed lost, or nearly so, and he became apprehensive that the credit of the "home institution" would be impaired, and manifested the most decided uneasiness at the situation. The prospect of recovering the money struck Ralston on the cold side, and, in his impetuous way, said to Mr. Sharon that he would feel the greatest relief if he could find a person who would assume the responsibility of returning the large sums loaned, upon a most liberal allowance of time. Mr. Sharon at once proposed to stand responsible to the bank for the full sum on condition that the bank advance to him a considerable sum, which should be used in running certain drifts contemplated by him, and give him two years to make the total payments. Mr. Ralston preferring

to look to Mr. Sharon rather than to the properties acquired, and to the securities held by the Bank, entered into an agreement upon the terms proposed. Mr. Sharon here manifested something of the spirit of reliance, will-force and sagacity which subsequently distinguished him as a man of mark. He had examined with the greatest care every mine, in every part, and had become the *mining expert*, as well as banker. He called to his aid, however, the best judgment of men of mining experience, and made a most thorough survey of the mining properties in which he had now become interested, and finally determined to drift for a *strange ledge*. A profound reasoner, he had come to the conclusion that where one man was found the country was likely to be populated; that one life of mineral gave promise of a neighbor; and that Nature was not given to eccentricities in the deposit of her stores of treasure;—that she might exhibit faults and sometimes dance upon a tangent, but soon or late comes down to business and makes her precious “plant.” A drift was at once undertaken, and prosecuted with prodigious vigor. That drift developed not only a new deposit of ore, but it very soon exposed to view the “King of the Comstock.”

The Fates for once were gracious. They yielded to human will. They prospered an inflexible intent. The music of the mills resounded along the cañon; the miners were set again to work; the face of nature, in the Sagebrush State, beamed anew in pleasant aspect. Pluck had found its reward. The mysterious process of standing an egg on end, had been solved. Other drifts were run, other ore deposits found, and the whole line gave token of new life. Within four months from the date of Mr. Sharon's assumption of the “forlorn hope,” as Ralston termed it, he was enabled to pay to the bank the whole sum due to it from these branches, and he had placed on deposit to his credit the snug sum of \$750,000. From this date, the managers of the Bank of California came to understand that the services and co-operation of Mr. Sharon were an indispensable necessity. Henceforth Mr. Sharon became the recognized leader in enterprises of the greatest magnitude on the Comstock, and these were managed with such adroitness and skill, that he was regarded as the financial chief of the Pacific Coast. His name was added to the directory of the bank; and although much of his time was employed in the management of its connections in Nevada, this institution evinced the thrift which his genius planned. But it is not for these exhibitions of his character alone that we are specially moved to write this sketch. The Fates employ peculiar methods to test their favorites. Lest the world shall ascribe success too much to a “chance shot,” they called the Furies forth, and on a Summer day “Hell broke loose” upon this human head. The time to try men's souls had arrived—none too soon, perhaps, for all concerned; and if our subject were to fail in this, the stamp and seal of a great character must rest on worthier brow than his. There came a day when gibes and sneers and rollicking laughter and the open speech of business men were hushed as by a thunderbolt; when men moved on the streets with visages cast down; with furtive glance; with bated breath and low-toned voice and scarcely audible whisper, told the sad tale of ruin, of beggary; of a sorry future before their eyes; of misery immeasurable!

The great Bank of California had *suspended!*—and Ralston, great-hearted Ralston, had drawn the veil upon a life that had lifted enterprise into exaltation, and reared monuments of grandeur on either side his pathway. The citizens of San Francisco will not forget that dreadful day while they shall live. The streets around the bank, packed with men and women; not a face among them all that gave an angry look! From no tongue was uttered one resentful word! The sad moan of the multitude was breathed in a monotone, with more of the *sigh* in it than audible utterance. We stood in that throng, looking upon the closed doors of the bank. The small sectioned door was opened, and our subject stepped through it upon the sidewalk, and for a few moments cast a steady look upon the mass of human faces turned upon him. His face, habitually mobile and imperturbable, expressed for a moment that touch of sympathy which can never be told in words. The multitude seemed to understand it, and raising his hat with more the purpose of admitting the cool air to his throbbing brain than in salutation, he turned with a step and manner full of resolution and walked away.

The last sad obsequies had been paid to his friend. Rumor had filled the air with stories which touched the honor of that friend, and made the resuscitation of the bank an apparent impossibility. The commercial distress had become appalling. The confidence which had been reposed in other lesser banking-houses was suddenly withdrawn; as was manifested by the general run upon them by depositors. The sweep of this tremendous wave of distress enveloped all business, and must be stayed at whatever cost. That which seemed impossible must be made to appear possible; that which was regarded as impracticable must give way before the practicable; the career of this panic must be checked; the shrinking of all property values must end. Action procrastinated was speedy destruction—delay was death. As with an epidemic scourge or a sweeping conflagration, the brains of men became unbalanced, ungovernable, or paralytic.

Here and now arose the invocation for a redeemer—a power who could command the waters to “be still,” and be obeyed—a body corporate or incorporate, who could smooth down the waves of despair—an inflexible Achilles, if need be, who would defend the name and honor of his deceased friend; who would re-adjust the deranged and broken links of capital, restore again the confidence of the people, revive trade, and place again the commerce of the city and State upon a prosperous career. Who shall it be? If mortal, let him appear! Come forth!

The first movement of consequence was the indefinite adjournment of the meetings of the

Stock Boards, which had only to be suggested by Mr. Sharon to be followed with alacrity. The next move which appeared was the calling together of the principal stockholders of the Bank of California, with a request to some other capitalists to be present, for the purpose of considering a proposition for the re-establishment of that institution. Both of these movements were made at the instance of Mr. Sharon. These trustees, stockholders of the Bank, and others invited, assembled at the hour appointed. It has been said that this assemblage appeared the worst whipped and most incredulous that ever met in California. The meeting was called to order, and Mr. Sharon arose to his feet and addressed those present briefly, to the following effect:

"Whatever there may be in the internal administration of the bank to condemn, it is not the work of this moment to investigate or portray. We meet under the most trying circumstances that can happen to business men.

"Every one present, either directly or indirectly, is allied in interest with the Bank of California. What this bank has been and what it has done, in the service of the interests of this coast, you all know. It was founded in the earlier days of our ambition, and should live, the lasting monument to our sagacity, our energy and our just pride. This seemed probable a month ago. Today, the Bank of California, and all its fair credit, is engulfed in a nameless but total loss. The financial earthquake has reft this noble structure from roof to foundation stone. I have called you together to inquire if the name, the "Bank of California" be worthy of perpetuation. This hour decides the question. If we decide affirmatively the moment has arrived when the pillars of this edifice must prepare to render to it an extraordinary support. If these pillars, already weakened by this heavy strain, shall totter and fall *now*, the hopes of the future to any of us, must remain indeed without promise. In financial affairs, it will be well for us to remember, that courage has its hour of trial, and victory its sufficient joy; but submission to defeat propitiates misfortune, and brings on miseries multiplied. I have a plan to submit to your consideration, which if adopted by you will result in re-establishing this bank upon an absolutely safe foundation, return to each subscriber the funds advanced to it, bridge over our larger losses, and place us all in a position of comparative ease. Not only this, but the vast interests of the people of this coast, at this moment shrinking and paralyzed, may become lifted again unto their accustomed courses of thrift. The power lies with us. It is our appointed duty. Let us act like men. I will read to you my plan."

Mr. Sharon set the example by making an astonishing subscription. Others came forward one after another. The subscription became full. The bank again threw open its doors for business, and the people hailed the event as a blessing, and deposited with it again as of old.

Few there are who have any conception of the arduous task which had been undertaken by Mr. Sharon. His personal attention to the affairs of the bank, to strengthen the nerves of the subscribers, to help them when they were weak and disposed to desert the ship, to exchange some for others who would be to him less troublesome, was for a considerable space of time his anxious and daily care.

The generous outlay of his energies, time and money in the settlement of Ralston's affairs, has been altogether a munificent bestowal. These, with the necessary attendance to his own private matters, altogether forming an amount of business rarely equaled in the history of the world, given to *one mind, personally to attend to*, and only and satisfactorily accomplished, leads us to regard Mr. Sharon, as the financial and business marvel of the age.

The constituency of Senator Sharon may well regard his service of their interests as unequalled in the work of restoration which he has accomplished, and they have shown their appreciation of his purposes by uttering no complaint at his absence from the U. S. Senate, during the last session.

Mr. Sharon having done fully and well the work he had resolved to do, in the re-establishment of the bank, the settlement of the vast affairs of his friend Ralston, and the building anew the grand superstructure upon which the people of the coast may depend for success, stands now ready to give his attentions to those eminent duties of the statesman, to which he has been called by the people of Nevada. We wait his record in that highest legislative assembly of the nation with confidence. The past has shown him worthy. Every presumption is to be taken in his favor. We shall see.

U. S. SENATOR J. P. JONES, OF NEVADA.

Here is a gentleman whose biography is a history of mining in California and Nevada. That is, a history of this great interest in these States, with the Senator's connection therewith omitted, would be like the play of Hamlet, with the character of Hamlet left out. Those who estimate the influence of this gentleman on the mining interests of the country by his connection with some of the richest mines on the Comstock Lode only, reckon without their host, for, prominent as he is as one of the millionaire miners on that wondrous lode, the influence of his wealth and energy on the country is better measured by his outside, almost unknown investments and gigantic enterprises, some of which we shall refer to in our sketch.

Senator Jones was born in England, in 1829; brought to the United States by his parents in the following year. They settled in Ohio, in which State the Senator was raised, coming thence to California in the Spring of 1850, after a nine-months' voyage around Cape Horn. Not yet twenty-one when he landed here, full of hope and energy, he lost no time loitering amidst the vice and wastes of San Francisco, but went direct to the mines in search of gold. There is scarcely a mining county in the State in which he has not worked as a miner—not by proxy—but with his own clear head and vigorous hands. We remember him working in a rich placer on the Stanislaus River, Calaveras County, as early as the Summer of 1851. Soon after, he was the owner of a rich claim on Wood's Creek, near Sonora, Tuolumne County. Then he went into Sierra, Butte, Nevada, Shasta and other mining counties, where he worked for years in those long, dreary tunnels, those monuments of labor and faith, which pierced nearly every mountain side in search of those deeply-hidden deposits of gold, from which the commerce of the world has been so enormously enriched. With the proverbial "miner's luck," many a "pile" the now famous Senator made and lost at the hazardous game of tunnel mining, spending the fruits of years of toil in shallow placers, to reach the grander prize of some table mountain lead, till he finally "struck it rich." To follow him all through his rugged path to success and honor; to record the incidents of such an eventful life as his, would require an entire volume of the MINING REVIEW. We can only briefly refer to his most important enterprises, such as that at Kernville, Tulare County, where he has extensive and valuable quartz mines, and one of the largest and best equipped mills in the world. This is saying much in these days of mammoth mills, magnificent reduction and hoisting works. This Kernville enterprise illustrates the Senator's fixidity of purpose and disregard of cost in carrying on his operations. Knowing that the ledge is sufficiently rich to warrant the outlay, but its development being impeded by water in the lower levels, he has put up machinery which, for more than two years, has been constantly pumping water at the rate of 10,000 gallons per minute.

Another of his great enterprises, and the only one he ever gave up without succeeding, was an attempt to develop the Panamint mines, in Mono County, which, after spending millions of dollars, he abandoned. To show the man's breadth of view and grasp of purpose, it may be mentioned that he had intended to connect this Panamint enterprise by rail with the Pacific Railroad in Nevada and with the coast. For this purpose he built the railroad and bought the site of the pleasantly located and prosperous town of Santa Monica, where he has built extensive wharves for the accommodation of steamers and sailing vessels. He had a corps of surveyors and engineers employed for months, examining the practicability of making a canal, roads, and a railroad across the Colorado Desert, to connect Nevada with the coast.

Equally gigantic have been his enterprises in the States of Nevada and Oregon. At one time he controlled the Ophir, Savage, and Crown Point mines, on the Comstock, not for mere speculation, to manipulate the stock market, but to develop for the benefit of the stockholders. He has a large force of men at work developing some valuable gravel mines in Eastern Oregon. Nor are his operations confined to mining, or to this coast. He is the owner of extensive establishments for the manufacture of artificial ice, at Atlanta, Georgia; New Orleans; Dallas, Texas; and other places, where immense quantities of ice are annually made, with costly, patented machinery. He is the owner of the famous Hamman Baths, on Dupont street, San Francisco—the most complete and costly establishment of the kind in the United States. A few years ago, he purchased 12,000 acres of land at the confluence of Napa and Sonoma Creeks, which was subject to overflow by both fresh and salt water. Around this land he has had built a dyke with sluiceways, and will have it thoroughly reclaimed, plowed, and made fit for cultivation, and, when ready, will divide into 120 farms of 100 acres each. He has expended nearly \$200,000 in this great work of making a small-sized Holland in California—making some of the most valuable land in the State out of what, without his enterprise and wealth, would have remained, perhaps forever, a dreary waste of mud. He has invested his means in almost countless works for the development of the resources of the country, and to increase the comforts and prosperity of the people—giving employment to thousands of the industrial classes. To his honor it may be stated, that, although his generosity has been a weakness, and his aid to enterprise almost general, he has never loaned a dollar on interest to any human being. All his great wealth has been employed in productive industry, in which others as well as himself have profited by his experience, skill, and energy.

Although laboring with hand and head for years in search of gold and silver, few men have devoted a greater share of their time to self-culture than Senator Jones. His political career, which culminated in his being elected to a seat in the U. S. Senate, was as vigorous and energetic as his search for gold. Of massive mold and pleasant aspect, and a fluent speaker, the hills and valleys of many a mountain district have reverberated with hearty applause at his sallies of wit and scraps of pathos, long before he took a leading part in the State Legislature. The same vigor of expression, the same industry in gathering materials to add force to his remarks, that have made him one of the most effective speakers in the U. S. Senate, was ever characteristic of the man. His masterly speech on the remonetizing of silver, during the last session of Congress, is recognized in this country and Europe as one of the most valuable additions to general information on the subject of coinage that has ever been written. His deep and laborious investigation of the question of finance—a question

that is agitating the whole civilized world—when matured will place him in the van of modern political economists.

There is something romantic—we had almost said exciting—in the career of such a man as Senator Jones. Landing alone, a mere youth, amid the wildest, most reckless men attracted hither from all parts of the world in the exciting search for gold, he has distanced hundreds of thousands of competitors in the race for that prize. While tens of thousands have fallen on the way under the influences of vice and intemperance, he pursued the even tenor of his way, cultivating his intellect, preserving his physical and moral health, so that when he reached the goal of his desires, we find one of the richest, most generous, intellectual and purest men of the age made out of the rude materials of an "honest miner." With the immense resources at his command, and his whole will-power and matured intellect devoted to the solution of the great problem of finance, nothing short of the paralyzing hand of death can prevent him reaping as great fame as a financier as his cruder efforts achieved fortune in the mines.

JAMES R. KEENE.

"Thou art so far and yet so near," that no series of sketches of men prominently identified with the stock interests of the Pacific Coast would be complete without a pen portrait of James R. Keene, the free lance operator of the San Francisco Stock Market, who dared to beard the Bonanza Kings in their den, and came off victorious with many shekels of gold and silver. Mr. Keene is no longer with us. Some time since, after having realized largely on his stock ventures, he concluded to take a trip East, to be extended to Europe, unless on the Atlantic seaboard he regained the health which too active exertions on the Pacific had impaired. And so he went, with his family. Those who bade him God-speed, expected to see him return within a few months—certainly within a year—with recovered health, new ambitions, new conquests to make. But he comes not. New York has presented more attractions than his old love, San Francisco. Railroad stocks, Jay Gould, gold, Sam. Ward, Rufus Hatch, Long Branch, Trenor W. Park, Newport, have been too many attractions for Jim Keene. He fell into the New York market as easily as any man generally falls among thieves—but he seems to have got the best of the thieves in every issue. When it was rumored that Keene contemplated making Wall Street his headquarters, his old San Francisco friends generally wrote out their calendars, and figured up when "Jim" would be back, bursted out and out, looking for a job. A few who had abiding faith in Keene; who knew his pluck; who had gauged his capacities; who had measured his horse sense, consulted their calendars and said, "Jim is gone! he never will come back to couch his lance in such a narrow field as ours. New York is big; Wall Street is big—just about the size of institutions that Keene wants to tackle." The few were right. Keene hasn't come back to look for a job; he has tried conclusions with the smartest of the Wall Street operators, and novice that he was, came out triumphant. The California goose that was to be plucked, wasn't plucked. Even Jay Gould, with all his shrewdness, gave it up as a bad job; and Vanderbilt condescends to confer with Keene on momentous occasions.

Keene started in his career as a Stock operator years ago, in San Francisco. He first was conspicuous as an impulsive, dare-devil sort of a street broker; acting for big firms, with an occasional dash for liberty and himself. Gradually he worked his way from steerage to cabin—from the private's ranks to that of lieutenant of the watch—then to officer of the day—and, finally, boss of the Stock concern. No man in the Stock Market exercised so much influence as Mr. Keene. He had hosts of friends—friends whom he grappled with hooks of steel—ready to swear by him on any and every occasion. Generous to a fault; brusque in manner at times, but with the heart of a woman, ready to melt at a moment's notice; open-handed and open-hearted to the appeal of even an acquaintance—no wonder that Jim Keene was the idol of the Market.

Mr. Keene is an Englishman by birth, a Democrat in politics, and a whole-souled gentleman by nature. It is to be regretted that he should prefer the heat and cold of New York, instead of our pleasant summers and more pleasant winters. Let us hope that Mr. Keene may revisit the scenes of his triumphs. He will be most warmly welcomed.

E. P. PECKHAM.

E. P. Peckham, President of the San Francisco Stock and Exchange Board, was born in Newport, Rhode Island, something over fifty years ago. In early life he aspired to collegiate honors; but after preparation, circumstances changed his plans—a digression which cost the world a possible L. L. D., or it may be a D. D. In 1850 he came to California, pitched his tent in San Francisco, and soon after engaged in the ship chandlery business. After a term of years, successfully devoted to the sale of anchors, cordage and other ship paraphernalia, he retired to become a member of the organization to which he now belongs. His connection with the San Francisco Stock Exchange dates back almost to its beginning, rendering him competent

therefor to give from personal observation a critical history of this institution, under whose auspices or shadow so much of life has pulsated with the ecstasy of hope or the agony of fear. As the annals of no other stock exchange of the world presents such sudden, frequent and violent fluctuations of values as do ours, there is, as a necessity recorded in the memory of our subject, a chapter of speculative, financial and moral history, which embodies an intensity of the tragic and of the comic that would, if delineated, form heroic texts for an hundred such pens as that which gave creation even to the inimitable portraits of *Les Misérables*.

Mr. Peckham is now serving his second term as President, foreshadowing in his popularity even the "Third Term," which neither tradition nor public policy here seems to interdict. This, added to his supposed relations with the great bonanza firm, as confidential broker, or chief of the *corps* of bonanza brokers, gives him no small degree of importance upon the floor and in the lobbies of the Exchange. Many an eye is constantly following his movements, studying his trusts and analysing his motives under the conviction, that with him is daily carried the fortunes of the market—the knowledge, by which millions are won or lost.

Still in the prime of manhood, our subject gives promise of a large volume of reserved energy and labor. Weighed in the financial scales, it is said his double eagles break the beam on the hundreds of thousands. Although his feet show scars of rugged paths, still it is evident that the proverbial "spoon" parted his lips before the parting of the umbilical.

In politics, he leans towards the Democracy—the Democracy, however, which sees in the Federal Constitution and its Amendments the ideal *Magna Charta*; in the unity of the States, a solidarity which no sectional interest should fracture; and in our system of public instruction, an auxiliary which no inimical hand should desecrate. Though of New England, yet he is cosmopolitan in sentiment and habit. Like Bob Ingersoll and Beecher, he has an inspiring faith in his fellow-men. Neither Calvin, Wesley, nor Leo XIII can hedge him about with creeds or formulas. The orthodoxy of his mother has, perhaps unfortunately, crystallized into a broad, latter-day liberalism. Now, following in the fresh footsteps of a great financial success, there is a bright bow bending across the horizon of his future. Likely, however, only to be allowed by the fickle goddess to touch the hem of the bonanza garment, still, Fortune seems to point him towards bank accounts, metropolitan frontages, loans, and national bonds, that are apparently to provide the way and means finally for liberal death-bed gifts to charity, education and friendship.

"Ned Peckham," as his intimate associates prefer to call him, has some of the best blood of the old Colonial times running in his veins. Both paternally and maternally, he touches, along the course of many generations, some of their strongest and best points of character. Although no family coat-of-arms or device of heraldry comes down to him from Anglo-Saxon hearths, yet true nobility, nevertheless, has sent its seal down the lineal line. The San Francisco Stock Exchange is probably the final field of business effort with him. His sun, now past the zenith, is beginning to turn the shadow eastward—indicating that the period has gone in which success would be likely to follow in another sphere. Fifteen years a member of the Exchange, his retirement from its floor will be, in all probability, either to indulge in the pleasures of travel or of a quiet life, or to take his place in some silent niche of some pantheon of the dead. But let what will come, history has been made, and no hand can now unravel the changeless woof. Contemporaneous judgment casts no shadow; and it is hoped the final verdict pronounced upon Edwin P. Peckham will come clothed with a charity as gentle as that of the loving friend.

COL. CHARLES L. WELLER.

This gentleman, who fills the responsible offices of President of the Ophir, Mexican and Crown Point Mining Companies, is a native of Ohio, was born in 1821, and educated in Miami University, at Oxford, in that State. Though an old resident amongst us, having arrived here in the Summer of 1850, the Colonel's connection with our mining interests did not commence till 1870. Were we writing of his political career, we should have abundant material for an interesting, exciting record, as his name is intimately connected with the early history of the State, but our object being to give a brief biographical sketch of the men who have been extensively engaged in mining, we are compelled to omit much in the sketch of such men as Col. Weller, that would be thrillingly interesting. We can only state—*en passant*—that he was the disbursing agent of the Commissioners appointed by Congress to define the boundaries between California and Mexico, according to the Treaty of Guadalupe Hidalgo, by which this State and Nevada became part of the territory of the United States. It was while in the performance of the duties of this office, that in 1849, he met the first swarm of gold-seekers at Panama, on their way to California. As soon as he had delivered his dispatches to the Federal Government, at Washington, he returned to California, arriving here in the Spring of 1850. His official connections, and the high estimation in which he was held by the Government, prevented him embarking in the mining business. He has held several important Federal and State offices. He was Postmaster of San Francisco from 1854 till 1861—and much of the present excellence in the management of that establishment is due to the system planned by Col. Weller. On his retirement from the Federal service, he embarked in the real-estate business, in which he was

very successful. His inflexible integrity, and confidence in the future of San Francisco, placed at his disposal a great many valuable lots in the heart of the city, from which he derived immense profits. In 1870, the real-estate business having been overdone, he commenced operations in mining stocks, and soon became one of the leading operators. His attention having been attracted to the extravagance and waste in working the mines, upon obtaining a large interest in the Ophir mine, he commenced agitating for a reform in its management, and soon discovered a regular system among some of the employés of the company by which the stockholders had been plundered for years, and exposed the plot of a secretary of the company and a contractor to work a portion of the Ophir ground for their private benefit, and effected such a general reformation in the management of the company's affairs, that the stockholders elected him its President—an office to which he has annually been re-elected ever since. His great practical business ability and fidelity to the interests of the stockholders, have caused a saving to them of \$3,000 to \$5,000 per month. His excellent management of the Ophir led to his election as President of the Mexican and Crown Point mines, the affairs of both of which he manages to the satisfaction of the stockholders.

The system for keeping the accounts of the Ophir Company, introduced by Col. Weller, has been adopted by nearly all the leading mining corporations on this Coast. Col. Weller is entitled to the credit of being one of the most efficient and honorable presidents of mining companies of which we have any record.

WILLIAM M. STEWART

Was born in Wayne County, New York, on the 9th of August, 1827, and arrived in California via the Isthmus of Panama, on 7th April, 1850. There are few public men on the Pacific Coast whose connection has been so close, continuous and influential with our mining interests as the object of this sketch, and we doubt if there is any other individual whose acts have left so deep and beneficial an impression on these interests as those of William M. Stewart. A man of Herculean form, with a massive, well-poised head and irrepressible will-power, he is one of those who appear born to command. Such men seldom fail to accomplish whatever they undertake. Thus, soon after his arrival here, we find Mr. Stewart as an "honest miner," working with a zeal that insured success, in the "Coyote Claims," as they were called on Buckeye Hill, in Nevada County. These claims were called "Coyote" because the miners who worked them, literally burrowed into the hillside like coyotes in search of gold, which they sometimes found in great quantities by drifting for a long distance in tunnels scarcely two feet wide and less than three feet high. While prospecting in the Fall of 1850, he discovered the Eureka diggings, which have been worked continuously ever since, and are among the more valuable of the placer diggings of to-day. To work these rich mines, he projected the Grizzly ditch, which is in use now—taking the waters of Grizzly Canon and Bloody Run, and carrying them, at an immense expense, down to the Cherokee diggings. To provide the miners and their families with lumber, he built the first saw-mill on Shady Creek, which was in operation for years. In the Spring of 1852, having had all he wanted of mining and sawing, he sold out his business and commenced the study of the law, with J. R. McConnell, at Nevada City. Such was the rapidity of his progress, and the force of his presence and speech, that in December, 1852, he was appointed District Attorney, to which office he was the following year elected by an almost unanimous vote, and performed its duties so satisfactorily, that in 1854, he was appointed Attorney General, and took up his residence in San Francisco for the first time. It was while residing here that he married a daughter of ex-Governor Foote, of Mississippi. Tiring of city life, he returned to Nevada city, and thence to Downieville, in Sierra County, then one of the most important mining camps in the State. There he devoted himself to the study and practice of laws concerning mining—ditch and water rights—a most important and lucrative branch of litigation. He continued in this business till April, 1860, when the excitement about the Comstock mines induced him to go to Virginia City, where he at once entered into partnership with Henry Meredith, who within a week or 10 days after was killed by the Putes, while defending the city from an attack by these at that time savage and warlike Indians. Mr. Stewart's thorough knowledge of mining law soon brought him abundance of profitable business. He was engaged in the conduct of nearly every suit brought before the higher courts of the Territory and State. The settlement of title of nearly all the mines on the Comstock is due to his sagacity and influence. The money obtained by his great legal talents was invested in the development of the mines, and he soon became one of the leading operators on the Comstock, and built for himself the finest private mansion there was at that time in the Territory, and invested nearly half a million dollars in real estate in San Francisco.

His view of the nature of the Comstock Lode, with reference to its being one, or a series of ledges, has not yet been definitely settled, though it involves the ownership of some of the richest ground on that great deposit of ore. As early as 1860, when litigating on this subject, he maintained that all bodies of ore found on the Comstock proceeded from a common origin. That Mount Davidson formed the foot-wall of the great fissure, but no hanging wall was reached, and that under the law as it then existed, the original locators on the Lode were entitled to everything between the foot and hanging wall, whenever the latter shall be found.

Near the surface, in those early days the ground was so much broken, and seams of quartz and clay running in every direction, that it was possible to connect by exploration nearly every body of ore found with that in possession of the original locators. Whether this can be done at greater depths, is a serious question, and besides, it remains to be determined what construction the Courts will give to the Act of Congress, which provides when two or more veins unite, the older location shall take the ore from the intersection down. In 1861, he was chosen a member of the Territorial Council, which office he subsequently resigned, and in 1862 was elected a member of the Constitutional Convention, and to him more than to any other individual, is the Silver State of Nevada indebted for those provisions in its Constitution which have made it one of the most prosperous States in the Union. In appreciation of his services the citizens of Nevada elected him to represent them in the Senate of the United States for two terms.

Mr. Stewart has given up politics and devotes his talents to mining litigation and the development of the mineral resources of California and Nevada. He has expended large sums in opening new mines, some of which will, doubtless, prove valuable. He has been engaged in mining in Amador County during the last twelve to fourteen years, and expended enormous sums there. Mr. Stewart's most enduring claim on the mining interests of the country rests on the important services he rendered them while member of the United States Senate. It is to his efforts the miners are indebted for the defeat of the measure introduced in Congress in 1866, to sell all the mineral lands of the country at public auction. It was Mr. Stewart's thorough knowledge of mining laws, and the rights of the miners, and his forcible style of reasoning, that defeated that measure, which, had it passed, none but the rich could have owned the mines. Scarcely a law relating to the mineral lands and mines of the country, passed by Congress during the past ten years, but contains evidence of Mr. Stewart's watchfulness and fidelity to the rights of *bona fide* miners. The biography of such men add lustre to the history of mining on the Pacific Coast. We regret that we cannot afford them greater space in the present edition of the MINING REVIEW.

WILLIAM M. LENT.

Everybody who deals in stocks knows William M. Lent, because he has been identified with the securities, actively and passively, ever since there was a stock board in San Francisco. In many respects Mr. Lent is a remarkable character. There are in the stock market different classes of operators. Some are brokers for themselves or others; some are chippers-in, ready for a turn—large or small; others are bold and venturesome; others shrewd, calculating; others, again, who know whereof they buy, because they have seen and know. Mr. Lent, in San Francisco, meandering around the stock boards, giving his orders, is a compound of many of the qualities suggested. But he doesn't always remain in town. We hardly think he could say how many times he has crossed the Sierras, on horseback, in the stage, in the palace cars, bound to distant mining camps to see for himself, for Mr. Lent is a very good judge of a mine himself. Idaho knows him; Montana knows him; White Pine knows him. Not a mining camp west of the Rocky Mountains but what Mr. Lent has visited personally and made his notes, mental and written. So when anybody comes to him with a mining incorporation, north, east, south or west, Mr. Lent brushes up his thoughts a moment and says: "Why, yes, I know what you are talking about; why, Old Gash and I were there; let me see, about four years ago;" or, as another camp is located: "Yes, I know where that is, Boyd and I were there and thought well of it a long while ago." Mr. Lent is thoroughly familiar with our mining interests. If he was an older man, he might be called one of the fathers of the Comstock, because "Bill Lent," as he was known familiarly by the miners, did almost as much to develop the Comstock as even the present kings. Mr. Lent always had confidence in the Comstock. His confidence generally in men and miners has been much larger than perhaps either has justified—specially the men. That Mr. Lent has been connected with nearly every prominent mining enterprise on the Pacific Coast is simply an undeniable fact. Mines are Lent's hobbies: "Tell me what you've got; let me see for myself and I'll buy your mine," is and has been his answer. No paralyzing of small interests by large exactions; no smouldering the fire of the impecunious miner who says "here are my ores"—but "give me a good prospect, and I am with you," says Mr. Lent. The latest, and perhaps the most successful venture of Mr. Lent's, has been in the Bodie District, Mono County, California. The Bodie mine has certainly developed most wonderfully—far beyond the expectation of even the most sanguine holders. Mr. Lent had faith in Bodie, and his dividends are the best evidence that his faith was not misplaced. Mining is a venturesome business, and when stocks are built up and inflated on what may or may not be, stock speculations become dangerous and most hazardous. But when a man takes hold of a mining enterprise on its merits (as he sees them), and comes out either successful or unsuccessful, he should be applauded in either turn of the question, and so should Mr. Lent be applauded. His successes are built upon his own confidence in the value of the properties in which he has invested; his failures are the same, illustrating how the shrewdest of operators can be deceived in judgment by results. At present writing Lent is away up financially. His check is good without being certified. His

word is as good as his bond, and when that is said, nothing more is needed. Mr. Lent is somewhat familiarly known as "Uncle William"—by his friends. To dissipate any idea that he is older than he ought to be, we will simply say that he was born in the State of New York—whence all smart men flow—in the year of our Lord, 1818, which makes him exactly—well, our readers can figure up for themselves.

Mr. Lent has been a good citizen. In early days, when Broderick and Gwin were fighting the battles of our country on the battle-fields of the Legislature at Sacramento, Mr. Lent was quite a politician, and a warm friend of Broderick. But politics gave way to mining; and although he has frequently been suggested as a candidate for gubernatorial honors, he has preferred to remain in the shade. Being a gentleman of comprehensive ideas, he has suggested many plans for the general advancement of the State, but their illustration is not within the purview of this article. Mr. Lent has gathered around him sons and daughters. Comfortable in his fortune; happy in his household; esteemed by his friends—all-deserving of them all is WILLIAM M. LENT. We append the following biographical sketch from the columns of a contemporary:

"In early life, he received a common-school education, fitting him with sufficient knowledge to make his way amongst men; and, when in his teens, left school for Florida, where he remained for some years. Upon his return to New York, he became associated with the well-known house of Schemerhorn, Banker & Co., where he acquired a knowledge of business habits, and developed a character for probity and honor that made his services invaluable. Mr. Lent came to California in the Spring of 1849, and soon thereafter became connected with Alexander B. Grogan, in the firm of Grogan & Lent, on Montgomery street, near Washington, where they carried on business for some years. Latterly, Mr. Lent was connected with the house of Lent, Newell & Co., afterwards Lent, Sherwood & Co., during which time he became largely interested in Mexican enterprises, having secured through his associates valuable rights connected with that country. He was mainly instrumental, through Capt. J. B. G. Isham, in starting the Holliday & Flint line of steamers, to ply on the Mexican coast, and furnished the means necessary to survey the State of Sonora, and to locate the Iturbide and various other grants from the Mexican Government. Mr. Lent was the first to countenance and aid the early locators of the Comstock with money, and at one time advanced the necessary means to develop the Central, Mexican, Savage, Bullion, and Yellow Jacket mines, injuring his credit amongst business men with what *then* seemed the wildness of his ideas."

D. O. MILLS.

D. O. Mills, one of our leading bankers and capitalists, is a native of the State of New York. A little hamlet not far from Newburgh claims the honor of his birth. He came to California in the flush times of gold nugget, fero, navy revolvers and personal enterprise. Circumstances then gave him to Sacramento City, where from humble beginnings, he arose, through integrity, tact, industry and perseverance, to the position of a prominent banker. This field finally becoming too circumscribed for the full sweep of his financial ability and genius, he removed to San Francisco, where he associated himself with the lamented Ralston in the management of the Bank of California, as its President. From this, he rapidly ascended to the plane of the millionaire. As a banker, he was constructed on the true model. His brain was cast in the mold of the genuine financier. Double eagles, as well as Bibles, evidently floated in the vision of his progenitor in the very moment when the elements of that brain were cast into form. A financial success from the moment he won the first shilling, he continues a success; and must, from psychological and moral necessity. Nothing short of a breaking up of mental and nervous organization will overthrow him. Cautious, and almost prophetic in his financial conceptions, his feet ever stand upon granite, and his hands ever rest upon pyramids of bullion.

A banking institution under his control would furnish a depository for gold as safe as if lodged in the Government Treasury. Although well up in the fifties, he is yet young. Good habits and systematic activity have solidified and knit into a column of enduring life his whole organization. Handsome in feature and general outline, as well as dignified in manner, he moves among men as an elegant type of American manhood, commanding the respect and confidence of all.

GEN. GEORGE S. DODGE.

Gen. George S. Dodge has an honest right to his magnificent physique for the reason that that State of giants, Vermont, claims him as one of her sons. In addition to the excellent facilities for the pursuit of knowledge afforded by the schools of that State, Gen. Dodge enjoyed the advantages of a University education. His tastes impelled him to a mercantile career, and after leaving the University, he entered a prominent house in Boston and received a business training which has since stood him in good stead. At the opening of the late war he entered a Massachusetts regiment, with the commission of Lieutenant. He performed his duty with such ability and discretion that promotion after promotion followed. In a brief sketch of this

distinguished gentleman's career, we cannot trace him through the different engagements in which he participated. Suffice it to say that he was in Fort Fisher fight, in the battle of New Orleans, and at various other points, where the battle raged the thickest. At the close of the war he honorably retired from the army, with the rank of Brigadier General. He next served his country in a civil capacity. Accepting a call to the Consul-Generalship of Bremen, he proceeded to that city very soon after leaving the army. He discharged his trust with the ability that has marked all his actions in public as well as private life, and only retired from his post when Bremen was absorbed by Germany. Having acquired some large mining interests on this coast, Gen. Dodge came hither to look after them. Once here he decided to stay. And since he took up his residence in this city, several years ago, no man has been more prominently identified with the great mining interests of California and the adjoining States and Territories. Every prominent mining camp has reaped the benefit of his intelligent enterprise. He has banded, purchased and developed hundreds of mines which, but for him, would never have given their treasures to the world. His immense private fortune, his more than ample credit, his high social position, and his reputation for shrewdness and tenacity of purpose, have given him opportunities for advancement beyond those of most other men. And now, in his thirty-ninth year, at a time when the horizon shines its brightest, he is compelled, by reason of impaired health, to visit the Eastern States for the rest which is essential to his recovery. His residence in Oakland, at once the most costly and picturesque in that beautiful suburban city, and wherein he has entertained Gens. Sherman and Sheridan, Don Cameron, and other leading men of the nation, will not know him again for several months. Meantime the General and his accomplished wife, will reside in New York. The General's mining business suffers no interruption during his absence. We trust that he will return to find the famous Mammoth rivaling the entire Comstock in its bullion yield.

GEORGE R. WELLS.

The conspicuous members of what is popularly designated as the mining community are not necessarily miners. The destinies of the mines are not wholly directed by the miners and the stock speculators. Litigation, intricate and exasperating litigation, crops out at some stage of almost every mining enterprise. The management of this litigation devolves upon those gentlemen in the legal fraternity who are known as mining lawyers, and calls for the highest order of talent. Time was, in the earlier days of Nevada and California, when the genial juror, the thrifty judge, and the willing witness, often brought about results contrary to the rules of evidence or decency. But, since the civilization of this far West, mining titles have been legally adjudicated. The mining lawyer, then, is an important factor in the consideration of mining problems. In the front rank of our mining lawyers is George R. Wells, of San Francisco. He is young, to be sure, but that signifies nothing in his case. When ability, experience and success attend his youth, no fault can be found with a man because he is young. These remarks apply with special force to Mr. Wells, for the reason that he is discreet beyond his years. Mr. Wells was born in the State of Iowa, but in what particular locality we are not advised, and his age is thirty-three. After graduating from Hamilton College, (Iowa), Mr. Wells came to San Francisco, arriving in 1865. He entered the office of Wilson & Crittenden, soon after reaching the city, and for ten years the office details of that famous law firm were under his direction. His tact and industry made his services as chief clerk of the office absolutely invaluable to the firm, and, on the other hand, the advantages accruing to him, from daily and confidential association with the leading lawyers of the Pacific Coast, were more important than most people would imagine at first thought. In 1869, Mr. Wells was admitted to practice by the Supreme Court of California. His association with the firm of Wilson & Crittenden, and, later on, with the surviving partner, Mr. S. M. Wilson, was not severed until 1875, when the bonanza firm of Flood & O'Brien secured Mr. Wells' services as office lawyer and confidential secretary. In this position of honor and trust Mr. Wells has participated in some of the weightiest mining cases known to the courts. His capacity for transacting legal business, his discretion, and his unquestioned integrity, have earned for him a reputation of which he may justly feel proud. Mr. Wells is a benedict, and has a pleasant home in San Francisco.

SOLOMON HYDENFELDT.

Never, perhaps, in the annals of legal warfare have so many important suits in so short a time occupied the judiciary of any country as here on the Pacific Coast since the discovery of the Comstock Lode. In these great combats of the Forum, no man has participated more largely than Solomon Hydenfeldt, nor have any in these contests displayed a greater amount of ability and learning, or served their clients more effectually than he. In nearly all the great historical cases that have come before our courts, he has been employed as counsel on one side or the other; his arguments before the Supreme Bench, of which he was himself for several years a distinguished member, having been numerous and occupying a large space in our law reports. Judge Hydenfeldt came to California from South Carolina in 1850, and has resided

here with his family ever since. At the time he was on the Supreme Bench of the State he had for associates Judges Murray and Terry, both men of marked ability. Indeed, the Bar of California was at that time made up largely of men of resplendent talents, containing such members as Baker, Baldwin, Lockwood, Tracy, Byrne, Yale, Felton, Haight, and other legal luminaries, who rendered it conspicuous by their eloquence, genius and learning. Among these bright and gallant spirits, the subject of our brief sketch stood in the foremost rank, the peer and fast friend of all. But Solomon Hydenfeldt has been more than a judge and a lawyer; he has been an active and zealous promoter of the great underlying industry of the country, having embarked largely of his means in an immense number of mining enterprises all over the Coast. Not only in mining for gold and silver, but, also, to those less enticing schemes directed to the development of our coal, copper, quicksilver, and other useful minerals and metals, he has often lent a helping hand. Even though these investments have not for the time being proved profitable, this fact has not deterred him from aiding with his money and advice these humbler industries. This gentleman has, in fact, exerted himself actively in the promotion of nearly all our leading interests, the range of his good services reaching from the highest professional duties down to the organization of a Kindergarten, a mission so holy that we are not sure but we should reverse this sentence. Indeed, we strongly suspect he has found more pleasure in these lowly works than in discharging the duties that have brought him more prominently before the world. Judge Hydenfeldt is permanently retained as the legal adviser of several of the leading mining companies, and other large incorporations, the magnitude of whose business renders the employment of the ablest and safest counsel necessary. Besides his superiority as a closet lawyer, Judge Hydenfeldt has achieved a full share of forensic triumphs, the latest notable success towards which he largely contributed having been the gaining of the great suit brought by the Eureka Consolidated against the Richmond Company, in which he was employed on the part of the plaintiff. Being scarcely three score years of age, this gentleman has, presumably, much useful work yet to perform in the material sphere.

ROBERT SHERWOOD.

For tenacity of purpose and confidence in the future of the Comstock, commend us to Robert Sherwood, Esq., whose happy face may be seen on California and Pine streets in sunshine and in storm—in sunlight and in shadow. There may be a panic in the Boards—Mr. Sherwood is on hand to advise and assist in the ways and means to restore confidence; stocks are up and booming, and Mr. Sherwood is on hand to take a few more shares, carry a few more for friends, and generally encourage the timid and congratulate the bold. Mr. Sherwood is an old-timer. Who does not recollect the firm of Barrett & Sherwood, jewelers, on Montgomery street, near Commercial, from time as old as San Francisco history? Mr. Sherwood is still a member of the firm, and every morning and afternoon spends a portion of his time in looking after the interests of the firm. The balance of his time is devoted to his mining interests—holding large blocks of stock in various Comstock and other companies. If Sherwood believes a thing in stocks has merit, he is pretty sure to take an interest. He is a bull in everything—specially wherein he is interested. Quiet and gentlemanly in his demeanor, generous and considerate in all his dealings, he has made a host of friends. Having had confidence in the bonanza mines early, his faith was rewarded by substantial profits derived from dividends and sales. Mr. Sherwood is now largely interested in Union Consolidated, Best & Belcher, Alpha, Scorpion, and other north-end mines that give promise of a great future. As an evidence of his popularity, we believe he is a Director in more companies and President of more companies than any man in the business. His signature attests the validity of more certificates and checks than an ordinary scholar could count in a day. As we remarked, Mr. Sherwood has been one of the lucky ones in stocks, and luck has come of confidence. He hies himself away to his beautiful country residence, near San Mateo, every afternoon; but, true as the needle, he is always at his post of mornings, unless business should call him to Virginia or elsewhere. Mr. Sherwood is a young man yet, ripe for many years of enjoyment of his well-earned prosperity. No one who knows Robert Sherwood grudges him his affluence. He has always been a barrier to protect the poor stockholder against the rich—always ready to stand in with the demoralized bulls when the exultant bears were crowding them to the wall. Mr. Sherwood was born in Ireland about fifty years ago.

HAGGIN AND TEVIS.

In mining, financial, and banking circles, no two men in San Francisco are so well known and so generally respected for integrity, honor, and *savoir faire*, as James B. Haggin and Lloyd Tevis, comprising the firm of Haggin & Tevis—mine-owners, land-owners, ranch-owners, stock-owners, bank-owners, owners of every kind of property that has value, up to millions and millions.

There are not on the globe two gentlemen of such different temperaments, doing business together on the Pacific Slope, as Haggin & Tevis. Mr. Haggin occupies comfortable apartments

in Nevada Block, where he can be seen in daily converse with anybody who wants to see him. When you want to see Lloyd Tevis, go down to the bank of Wells, Fargo & Co., and you will see Lloyd Tevis in the private office; and, unless your securities are unexceptionable, you won't get much money. Return to Nevada Block, and interview Mr. Haggin. A gentleman of a certain age—say surely fifty-five—but as straight as an arrow, eye as keen and bright as an Indian's, complexion swarthy but as clean as a whistle. You enter: no unnecessary compliments. "How are you?" is about the conventional style of reception. "Glad to see you: now, what do you want?" And business results. Mr. Haggin possesses the remarkable faculty of despatching business. He is not technical. If there is a short cut leading to the same channel of results, he takes it at once. He is so familiar with the whole *minutia* of stock corporations, that at a glance he can see whether things are as they ought to be or not. Mr. Haggin does what few millionaires do—encourages the buying of good steeds. His stables are a curiosity, as we are informed, not having seen them. But in the Park we have seen him. Behind a four-in-hand, he drives the only mail-coach that has made its appearance in the Park. Bob Graves has some such similar arrangement, but Haggin is the only mail-coach Jehu; and to see him on a Sunday morning, when people ought to be at church, sitting upon that coach, stove-pipe hat on head, the trumpeters behind—it is really enjoyable; although people quietly proceeding to church about that time might enter protests. But as long as there is authority in Henry Ward Beecher that there is no hell, why should anybody care? Mr. Haggin is independent of what churches think, and will very properly do as he feels like doing. Mr. Haggin is seen in the Park frequently—if not with his self-driven mail-coach, then in his self-driven tandem box arrangement, with George Hearst by his side, discussing what could be done here or there in the Black Hills; or behind a spanking double team, with Gen. William B. Carr behind, when they move along quietly-like, and suggest to each other about the Kern County desert lands. In many respects, Mr. Haggin is the best judge of character we have met. Positive in manner, and yet willing to listen to every argument—providing they be short. Mr. Haggin came to California from Louisiana in 1850, and has since been a resident of this State—identified with its interests, with those of the Pacific Coast, with Utah. Among the mines ruled by Mr. Haggin, as special representative of his firm, is the Ontario of Utah—about the biggest mine in that section. George Hearst was the main spring whence sprung this mine, which pays dividends, and extra dividends, month after month. Mr. Haggin's firm, and Mr. Hearst again as chief promoter, have become the big owners of the big Black Hills mines. Mr. Tevis is the President of the Home Stake, Mr. Haggin the Treasurer of the Golden Terra—both largely productive mines. Besides these, they control the Home Stake No. 2, the Armes, and we don't know how many others. In all the good mines they have interests. Never a new district but what George Hearst waltzes off, and, if valuable, a slice comes off.

Mr. Tevis can be found, during office hours, at the Banking Department of Wells, Fargo & Co., where he reigns as High Mogul of the Finances—the house necessarily controlling the extensive operations of the Express Department, which extend to every part and portion of the Pacific Coast. Mr. Tevis is a blonde, and in complexion the very opposite of Mr. Haggin. While Mr. Tevis is inclined to be communicative, Mr. Haggin is repressive. A passing individual would listen to Mr. Tevis, and impart his confidence; to Mr. Haggin he would rather be on the defensive, or at swords' points. But the question has always been, Who would be the better off in the end—the one who hearkened unto Tevis' pleasant smile, or the other, who preferred Haggin's immobile, uncompromising glance.

Mr. Haggin and Mr. Tevis are among the leaders of society in San Francisco. Their edict is an edict; and no one may expect to enter within the charmed circle of Taylor street and other hills, who is tabooed by the Haggins and Tevises. Recently, the charmed family circles have been invaded, and several ornaments thereof stolen away for Eastern and other more salubrious climes. The House of Haggin will miss those who have gone or are going; also the House of Tevis. But while the young are mated and fly away, the old remain; and Messrs. Haggin & Tevis have too many interests in San Francisco and in California to think of any permanent residence elsewhere.

JOHN W. GASHWILER.

One of the most remarkable operators on Pine Street is General John W. Gashwiler, whom not to know in connection with mines and stocks, is to argue yourself unknown. Everybody in the Stock Boards and out of them, who dabble in the securities, know the General, or "Old Gash," by which he is referred to by his friends. Not that he is old by any means; for, although his head is almost as bald as any head can be, he is hardly more than forty-five years of age, as the records of Randolph County will show. Mr. Gashwiler came to this State when scarcely a beardless boy, and having made a raise down in Tuolumne County, where a partner of his had the misfortune to be hanged from a flume for killing somebody in self-defense, concluded that a pork speculation would enhance his fortunes. So he journeyed up to Oregon and bought a cargo of live porkers, and shipped them on board of a bark bound for the Golden Gate. He embarked on the same vessel, to keep an eye on his pets. Necessarily, a storm arose at sea—

and a big storm, at that. Hour by hour Mr. Gashwiler saw his fortune thrown to the seas as hog after hog went overboard; and, as Gash now says, when in a melancholy vein, "When we got to San Francisco, there were just three shoats left of the whole lot, and when I settled for everything, I had just an even \$5 piece left—and it wasn't whole either, because there was a hole in it. But in those days pork was up in San Francisco, and I would have gone back to old Missouri with a pile if the hogs had only pulled through." With that \$5 piece Gashwiler managed to get back to his old mining ground in Tuolumne, and it wasn't long before he was on his pins again—although an old negro salted a claim on him good. From placer mining, Gashwiler got quartz severely on the brain, and the love thereof still remains. No man in California has been interested in and had a hand in the buying, selling, and management of gold quartz mines than he. The Washoe excitement necessarily found Gashwiler at the Comstock front, and a gay and a merry and a prosperous time had he and his friends. They speculated in mining ground and everything else. Gashwiler saw that water would be a good scheme, and with John Skac, Hock Mason, Charles G. Funk, "Joggles" Wright and others, organized the present water company that supplies Virginia and Gold Hill with water. Gashwiler was general superintendent, and he watched that water from early dawn to dewy eve—allowing none to escape from any defects in the flumes or ditches. Finally, he tired of the Comstock and water, after making several fortunes in both, and then losing them. He sold out his water and stocks, and with Johnny Skae made a royal visit to the Eastern States by steamer via Pauana. A friend who "saw them off," says that the store of provisions provided for the travelers blocked up two staterooms. They comprised in the main demijohns, champagne baskets, and small kegs. The travelers were abundantly supplied during their long and arduous trip, but they pulled through safe. Skac remained true to the Comstock and water; still controls the latter; and as President of Sierra Nevada, has recently lifted up his head, even against the Bonanza Kings. Gashwiler, returning, went after gold quartz. What he accomplished is written in the records of Plumas Eureka, the Sierra Buttes, the Hayward Mine, of Amador, the Keystone, the Original Amador, the Seaton, the Black Bear, the Klamath, and dozens of other big California quartz mines. Acting in the interest of English capitalists, he secured many valuable properties, which have paid for themselves ten times over in dividends. The largest check ever given on a mining purchase was that given to Gashwiler by the late Michael Reese—over half a million, Reese acting for a corporation. Of Mr. Gashwiler's recent operations, may be mentioned a venture among the Tuscaroras, but it panned out poorly. He was prominently identified with Belmont and with John F. Cassell, General D. D. Colton, Colonel John F. Boyd, and other operators, making it warm for shorts. But, financially, he came out at the small end of the Belmont horn. General Gashwiler's latest new departure has been in the Black Hills quartz mines, which he visited in August last. There is one peculiarity about him—he always wants to see for himself. Every mining district on the Pacific Slope is as familiar to him as household words; and being possessed of a wonderful memory, he can tell you all about the past history of any and every prominent mining camp. He knows all about the "mother lode of California;" he has tramped over it. Not a stage line in Nevada or Idaho or Utah or Montana, but Gashwiler has slept through some of its weayy marches as happily as though he was at home in bed. His recent visit to the Black Hills resulted in the purchase and bonding of several valuable properties, which will soon be making profits for the owners. "Old Gash" is irrepresible. Up to-day, down to-morrow, but the next finds him ready for another tussel with Daue Fortune; and in the end he generally comes a-top. He is rather too sanguine in his estimates, and too apt to be carried away by his own impressions. In some ventures, even so close and shrewd an examiner as Mr. Gashwiler has been "salted," with disastrous results to himself and friends. No man is more popular on the street than "Old Gash." He is indomitable, and when determined, can carry through almost any scheme by sheer force of will. Those who at first laugh his scheme to scorn, are content to come in and pay for a slice of the bonanza. Mr. Gashwiler enjoys the confidence of many moneyed men, who have always made coin upon his representations. Take him for all in all, and John W. Gashwiler is one of the most remarkable of mining operators on the Pacific Coast. Generous to a fault; with a heart as big as his head, he has more friends than—he knows what to do with. And so we leave General Gashwiler.

MARK L. McDONALD.

Col. Mark L. McDonald is one of the well-known McDonald family of six-footers, who all sprang up in the Blue Grass region of Kentucky; are all Democrats, except one, and have all made their marks in the history of San Francisco and the State. The brothers are James M. (better known as Capt. Jim), who is President of the Pacific Bank, a large California quartz mine owner; D. L., a railroad builder and mine operator—President of the Belmont, and of the Mechanic's Real Estate Associates; M. Jasper, the well-known broker and operator; Dr. R. H. McDonald, who is known all over the State as a pioneer druggist, and the only Black Republican in the family; and Mark L., the subject of the present sketch, one of the most notable brokers, operators and politicians in the State; of stalwart proportions and commanding presence, he is at home everywhere. His *bonhomie* is such as

to win friends even from the ranks of his opponents. For years in the stock marts he won for himself the appellation of the *Ursa Major*, being ready on every and all occasions to short stock, sell calls, and generally discount the market. But Mark was shrewd enough, that while he left everybody to see what his right hand was doing, very few thought that his left hand was quietly laying in a store of bonanzas, on which he serenely rode on to competence and wealth. Mr. McDonald's course in business has not always been strewn with flowers; thistles and nettles have beset his path, and it wasn't once alone that disaster stared him in the face. But he arose superior to every threatened failure, and finally his well-freighted bark rode through all the storms and left him with all the friends he cared for, and property and means enough, carefully husbanded, to bid defiance to adversity. A large portion of his means are invested in Santa Rosa property, and no one in that pleasant town and valley has done more for its substantial interests. On a Saturday afternoon, he shelves the cares of business and hies him off to the country and recuperates, like a sensible man. He early caught the Black Hills fever, and at bed-rock prices secured large interests, which, before long, will yield in dividends enough to make him still more independent of stock-boards and other business ventures. Within a year or two Mr. McDonald has developed a decided penchant for politics, and last Winter was a prominent candidate before the Legislature for the United States Senatorship. If he did not win, it was not for lack of shrewd management and recognized ability, but rather because the cards were against him, the deck having months before been quietly arranged in favor of an older hand in the game. Mr. McDonald made many friends in the campaign, and being now fully identified with his party as a leader, will hereafter take a prominent part in its councils. He is young enough to lose more battles with honor, and finally snatch the prize from more ambitious rivals. In stock circles, Mark is recognized authority, many of the lesser lights following him or heeding his counsels as gospel truths. His relations with clients and his fellow brokers have always been cordial and fraternal, and should he ever want to sell his seat in the San Francisco Board, it would meet with such opposition as would preclude his successor from being elected. His is one of the peculiarities of the brokers of that Board. When they like a fellow member they want him to stay with them, refusing to elect his successor. When they don't like a fellow member, his successor is generally elected by almost unanimous vote. Mr. McDonald is always in a good humor, and as he saws the air with his long arms, buying or selling, to meet the demands of the "boys," there is a pleasant smile on his countenance and a merry twinkle flashing from his honest, blue eyes.

COLL DEANE.

This gentleman is of Irish birth, and one of that class of Irishmen whose descendants may justly be proud of their lineage. He is now 42 years of age, having lived in America 27 years. He joined the San Francisco Stock Exchange as a member in 1867, and retired in the Spring of 1878. He has always been known more as an operator than a broker, caring little for the paltry commissions paid by clients. For eight years previous to his connection with the Board he was employed by Murphy, Grant & Co., one of the largest mercantile houses on the coast, in a confidential capacity. His first fortunate venture was in Crown Point and Belcher, in 1870. Several additions were made to this fortune during the two or three succeeding years, and when the bonanza in Con. Virginia was discovered he was in a condition to avail himself of the advantages to be derived from the possession of vast wealth. His investment in the bonanza Stocks probably exceeded a million of dollars, and having unbounded faith in the parties who gave him information concerning the mine, he clung to them till forced to sell or be left to the tender mercies of exacting creditors. Since retiring from the board of brokers, he has largely interested himself in the "Black Hills," and is now the leading spirit in the development of the "Father DeSmet." For a man of his years his operations, in the mining Stock world, compare favorably with those of greater experience whose fortunes are now estimated by their millions. While on a late visit from the Black Hills to this city, and during the excitement over the Sierra Nevada—Union bonanza, he obtained information which led him to invest largely in the Union at low figures, and from which he realized a snug fortune.

D. F. VERDENAL.

The subject of this sketch was born on the 24th day of August, 1841, in the town of Jacksonburg, in the county of Herkimer, New York. His parents were natives of France. They emigrated to New York, and being respectable, industrious and enterprising, saw that the Far West was opening up prospects where such qualities would command success. They accordingly, in 1844, found their way to St. Louis, but they felt like moving still farther west, and in 1852 they crossed the plains, landing in San Francisco after a six months' journey. After "life's fitful fever" they repose, side by side, at Lone Mountain. They were the kindest and most self-sacrificing of parents, and their children will always cherish their memory with the deepest veneration.

Shortly after his arrival, young Verdenal made the acquaintance of Judge Burritt, a very

eminent practitioner at the bar as well as a ripe scholar. The Judge was not long in discovering the lad's talents. He kindly prescribed a course of Blackstone, and took genuine pleasure in explaining to his apt and ready pupil the more recondite passages of that great jurist. He also practiced him in the arts of composition, corresponding with him regularly while attending the Supreme Court sessions at Sacramento. About this time Caxton (W. H. Rhodes), who was then editor of the *True Californian*, offered a prize of twenty-five dollars to any youth, under fifteen years of age, who would write the best essay on the subject of the Pacific Railroad. Young Verdenal, not without considerable competition, carried off the prize, and the essay was duly published, with very flattering comments. The literary laurels thus gained roused his young ambition, and we find him shortly afterwards embarked in the newspaper business—first editing the *Young America*, a very respectable sized weekly, for a period of six months, and then the *Pacific Courier*. His coadjutors, in this early period of his journalistic career, are all residing in this city, and can fully attest to the ability and enthusiasm which he then displayed. The "copy" was abundant, and when the compositor was absent from his case, as not unfrequently happened, and there was danger that the publication of the paper might be delayed, he bravely undertook the printer's task. This exercise he repeated so often, and with such assiduity, that he became a proficient and rapid type setter.

In 1858, when the Frazier river excitement was at its height, lured on by commercial prospects, he went with his father to Victoria. The bubble, however, soon burst, and he returned to San Francisco. The moment had now arrived when he must decide upon what career he should pursue through life. The early lessons of Judge Burritt were not forgotten, and he decided that he should become a lawyer. To fit himself for that noble profession, he resolved to undergo a thorough discipline in the classics and mathematics. He accordingly took his departure for the East, and in September, 1858, we find him matriculated at the St. Louis University, no longer amid such scenes of excitement as Vigilance Committees, but amid learned professors expounding passages of Plato and quoting Horace.

Here he remained, pursuing his studies, which comprised the usual classical curriculum, until the Fall of 1860. In two years he had gone through a course of instruction which is seldom completed under five, and was on the threshold of graduation: nay, more, he had carried off all the honors, and against students who had never known defeat.

Thence he proceeded leisurely to Cambridge, Massachusetts. On his way, he stopped a few weeks in Washington. The country was in the incipient throes of internecine war. The oratory that then resounded in the halls of Congress was heartfelt and impassioned; but on one side, at least, it too painfully brought to mind the conspiracy of Cataline. Under such circumstances, our young student, on the 4th day of March, 1861—the day of the ever-memorable first inauguration of Lincoln—was enrolled among the students of the Harvard Law School. He soon became a favorite with the professors, especially Professor Parsons, who, while not overcome with temporary vanity, was one of the most genial of instructors. In this celebrated institution and its surroundings, the subject of this sketch passed, as he freely confesses, some of his happiest days. The parliament or debating society, to which all the students belonged, offered a free scope for the exercise of all the arts of speaking, from the most withering sarcasm and cutting irony to the highest oratorical flights. It was a field where young, keen and polished intellects incessantly clashed, and whence our youthful representative of the Pacific seldom came forth unvictorious.

In the month of April, 1862, having received his degree of Bachelor of Laws, he made application to be admitted to the Supreme Court of Massachusetts. After a rigid and protracted examination, his aspirations were crowned with success. In July, 1862, after four years' absence, he found himself again in the city prized by him above all others. In conjunction with his brother, he opened a law office in Court Block, on Clay Street. His fondest hopes of the pecuniary emoluments which result from the practice of law, were only measurably realized. Overcome by his old habits of literary composition, he drifted insensibly into writing for the Press. In 1868 there broke out what was known as the White Pine fever. He became one of its first victims. Under the hoary brow of Treasure Hill, in a cabin seven-by-nine, he displayed his shingle by day, while he heard the mountain blasts howling all through the long nights. He saw the glories of Chloride Flat disappear, and the fabulous wealth of the famed Eberhardt fade away as mists fade in the morning sun. During all this time he was the *Chronicle* correspondent, and in that capacity did much to dissipate the exaggerated reports made of this section of country by journals professing to be truthful and non-sensational.

On his return, he was tendered and accepted the position of Sacramento correspondent of the same paper, during the Legislative session. In this new position, to say that he admirably succeeded, would be but faintly to convey any idea of his merits. His treatment of every subject; his criticism of every measure; his pen-portraits of budding statesmen, and veteran legislators; his exposures of fraudulent schemes, were all presented in a style which fairly took the public by surprise. Epigram, wit and humor abounded in almost every paragraph, interspersed by trenchant and convincing argument. If they were at times ironical or sarcastic, they were free from anything like malignancy. He subsequently became editor of the *Chronicle*, occupying the position until the Spring of 1872, when he tendered his resignation, and was succeeded by Frank M. Pixley. His connection with that paper did not, however, then cease;

he continued for a period of about two years further to write its mining and stock and political reviews.

After his editorial duties terminated, he formed a copartnership with T. J. Poulterer, Esq., with whom he jointly held a seat in the San Francisco Stock Exchange. The new firm, at first successful, met with reverses, and was dissolved after an existence of about six months.

Mr. Verdenal, however, was by no means discouraged. He felt that the mining interest was the all-dominant and permanent interest of the Pacific Coast, and that with that interest he should bind up his fortunes, and with it "sink or swim."

On the Comstock, in Utah, in Arizona, in the Black Hills, he became interested in numerous valuable mines, most of which he inspected personally, and of which he is the Secretary. Among these may be mentioned the Leeds, of Utah; Rye Patch, of Nevada; Home Stake, Golden Terra, and Calcedonia, of the Black Hills; Tip-top, of Arizona; Albion, of the Eureka District; Chieftain, of Bodie; Don Quixote, of Lake, California; New Coso, of California, etc.

Some three years since, this gentleman purchased a controlling interest in that very able and spicy journal known as the *Daily Exchange*, which, while a paper of general circulation, is in the main devoted to the mining interests.

The paper is still under his general management and control, and he finds time, notwithstanding his other manifold duties, to contribute largely to its editorial department. His facility for composition is simply marvelous. While engaged on the *Chronicle*, he has often been known to write two and three columns of editorial matter in a couple of hours only before the paper went to press. Conceiving his subject strongly—possessing a diction which is at once copious, elegant, and simple—he grapples with it; there is no such thing as hesitancy; he seems inspired; and he throws off page after page without interlineation, or the alteration of a punctuation-mark, apparently regretting all the while that he cannot exceed the locomotive in its speed.

In his manners, Mr. Verdenal is genial and courteous, always indulging, when occasion offers, in sallies of humor, not unfrequently mixed with innocent bits of sarcasm.

His temperament is ardent, his nature sanguine, and his disposition generous almost to a fault. Bitterness, rancor, or hate have never found lodgment in his breast. He is a live man *par excellence*, and no believer in theories or isms of any sort; he believes in man as he finds him, and in society as it is, and regulates his life accordingly. Shakespeare is his favorite author, not Darwin.

In 1869, he led to the altar Miss Susie L. Edelen, a resident of Elk Grove, Sacramento County—a beautiful and highly accomplished lady, who has borne him three children, who seem to reflect the genius of the father and the beauty of the mother.

GENERAL THOMAS H. WILLIAMS.

The above-named gentleman is one of the most successful mining operators San Francisco has yet produced. He is a lawyer by profession, and not until recently did he abandon his life long pursuit, but the care of his immense fortune made by fortunate investments in the bonanza excitement four years ago, compelled his retirement from the Bar. General Williams now confines his operations mostly to the reclamation of immense tracts of so-called swamp lands along the Sacramento and San Joaquin rivers, and in his work of redeeming these acres to cultivation has already expended nearly a million of dollars. General Williams is the eldest son of the Hon. Sherrod Williams, for many years a member of Congress from Kentucky, and at one time quite prominent in National politics. He came to this coast in 1852; and the gold fever being then at its height in El Dorado County, began the practice of the law at Coloma, and there he remained for several years. He attained eminence in his profession at once, and being an ardent Democrat in politics, soon came prominently before the public as a skillful political manager. When John B. Weller was selected Governor, General Williams was elected Attorney General of the State on the same ticket, an office which he filled with consummate ability. When the Washoe excitement broke out, it proved a perfect bonanza for lawyers of ability, and General Williams was not slow to improve the opportunity. He removed to Virginia City without delay, soon became the leading counsellor on the Comstock and it was there he laid the foundation for his immense fortune. In a prominent suit which he won in 1870, his client induced him to accept 100 feet of what Clarence King called barren ground, in the northern section of the city, in lieu of his fee of \$5,000. The General regarded the proposition rather reluctantly, but seeing that he was not likely to get anything else, he accepted it. This ground was known as Central No. 2; it was subsequently incorporated with the California mine, and proved to be the ground through which ran the very richest and bulkiest part of the great bonanza. By the discovery and subsequent rise in value of the property General Williams made a fortune of over \$4,000,000 and by his investment in adjoining property, he rapidly accumulated at least \$2,000,000. He retains nearly the whole of that fortune to this day, and has added to it considerably more.

General Williams is one of the most cautious and careful operators in the street. He never buys a stock without merit and plenty of it, and no man knows better when to sell than he. The only time he allowed himself to be caught in any way, was when he found himself

loaded up, about two years ago, with some twenty thousand shares of Savage. He owns that Savage to this day, and means to hold it to the end of his career, or until something of value is found in it. About a year ago the Savage stock-holders invited the General to take the entire charge and management of the property, and he has done so since with rare business tact and prudence. General Williams is not in some respects a popular man, in the sense of popularity as the street understands it. He has the reputation of being hard and cold and unsympathetic, while others, who do not know him well call him parsimonious. He is, in fact, none of these. No man has a kinder heart, or more sympathetic feeling with those in distress than he. He is inclined to be vindictive, and to men who have ever sought to injure him, or to take advantage of him in any way, he shows no mercy. But to his friends those who remain steadfast and true, and who act honorably with him in all things, no man could be a truer friend or show more warm-hearted interest in his affairs than General Williams. General Williams has a family of five children, with whom he lives in an elegant home in Oakland.

THOMAS BELL.

"And who is that shrewd, quiet-looking gentleman, with clean-cut face and speculative invited whiskers, talking so positively to Horace Hill," asked a gentleman the other day of a *cicerone* who was showing him around the stock speculating centers. It was Thomas Bell, Esq., an old resident of San Francisco, a gentleman by birth, a financier by instinct, and a capitalist, *ex necessitate rei*. Horace Hill, being a good broker as well as a personal friend, does a great deal of business for Mr. Bell, and they were probably discussing the propriety of buying another thousand or so of Bodie, Mr. Bell's latest successful venture. Mr. Bell has large and varied interests in the mining industry of the Pacific Coast. When a good thing is on the tapis, Bell is sure to come in for a slice, because he can always draw his check for an unlimited amount; he likes the excitement of pastures new, and has confidence in mining ventures. If we had all the dividends Mr. Bell has drawn from his mining interests, we should have purchased a principality somewhere long ere this. Mr. Bell has been identified with the house of Barron & Co. since its existence, and may now be called the Quicksilver King of the Pacific Coast. He is largely interested in the North Bloomfield Hydraulic Gravel Company of Nevada County, probably the most colossal mining enterprise of the day, and in many valuable California quartz mines. He figures personally as a Bank Director, being one of the leading managers of the Bank of California, whose resuscitation in no small way is attributable to his determined efforts. Mr. Bell dabbles considerable in stocks, but his native, canny-Scotch shrewdness makes winning where others would be losers. Bold at a venture, he is yet cautious in the progress of the venture. He can see danger ahead farther than the average, and his position gives him opportunities for knowing things which few possess. Rather suspicious, the least crookedness rouses the lion, and trouble is sure to come to somebody. And yet, Mr. Bell, as a friend, is the staunchest and truest. It hurts him to say no, and there must be very good and undeniable grounds for his action when he turns away from a prayer or a speculation. Quiet and unostentatious in his manners, comprehensive in his conversation, wide-awake as to contingencies. Mr. Bell is, in many respects, *sui generis*. He has a host of friends who look up to "Tom Bell" as one of those who is a friend indeed. Mr. Bell is gradually climbing up life's grade, but his good habits and quiet ways of life have prepared him for a ripe old age. Ten years make but little difference in his appearance, and he meanders along the street as spry as he was time ago. At home, Mr. Bell is a prince in hospitality; in his office, he is a gentleman, and no wonder he is popular with all who know him. Mr. Bell counts his money by millions. Mr. Bell is a native of Scotland and, according to the best authorities, must be about fifty-six years of age. He lives in comfortable quarters, on Bush street, where friends are always welcome to his hospitalities.

COL. JAMES M. BARNEY.

Col. James M. Barney, of Yuma, Arizona Territory, is chiefly known in mining circles by his ownership of the controlling interest in the famous Silver King Mine—the richest silver deposit yet discovered in Arizona. For nearly fifteen years Col. Barney has been a power in Arizona mercantile interests, and his mining celebrity was rather thrust upon him. Col. Barney was born in Cayuga County, New York, in 1838. When but sixteen years old, or in 1854, he came to California, and went as an humble clerk in a store in Santa Cruz. From there he went to Watsonville, and the next ten years of his life were spent in the same section. He was too enterprising, however, and had entirely too much ability to remain in a subordinate position longer than to obtain a complete knowledge of business; so in 1865 we find him in Arizona, where he soon accepted a heavy freighting contract for the U. S. Government, a trust that he fulfilled with all the energy of his nature. Col. Barney was one of the pioneers of the new Territory. He performed his contract in the face of herculean difficulties, but he did his work well, and won the entire confidence of the military authorities, a confidence which he enjoys

to this day. In addition to his business for the Government, the Colonel soon launched out in a mercantile way, becoming a member of the firm of Geo. F. Hooper & Co., at Yuma, with branches at Maricopa Wells and Camp McDowell. The two latter were placed in Col. Barney's charge. The firm subsequently underwent many changes, Col. Barney each time securing a greater interest. From G. F. Hooper & Co. it became Hinton, Hooper and Co., then Hooper, Whitney & Co., then William B. Hooper & Co. Finally Col. Barney bought out the last of the Hoopers, and became sole owner of the business, which by this time had grown to enormous proportions, under his indefatigable and successful management. For several years he enjoyed a monopoly of the heavy trade of Western Arizona. He was the only man who dared attempt the government's immense freight business; and until the railroad was completed to Yuma, Col. Barney handled every pound of military and Indian stores and supplies sent to Arizona from the Pacific side. About this time, having made heavy advances to the owners of the Silver King Mine, just opened near Florence, he became possessed, rather against his will, of an interest in that property. The mine began to show up immense treasures, and he subsequently increased his interest, until he owned one half the mine, at a total cost of \$260,000. The Silver King still improved in richness as depth was attained, and when the permanency of the ledge and the extraordinary wealth of the deposit seemed placed beyond question, he in company with one or two friends bought out Mr. Reagan's interest of one half, for the princely sum of \$350,000. Since the mine has been under his management, it has paid up to September \$400,000 in dividends, and will pay regularly hereafter at the rate of \$50,000 per month.

Col. Barney now spends a great deal of his time in San Francisco. He is immensely wealthy, and though but 40 years old, has made every cent of his million or so, by his indefatigable energy and business tact and foresight. He is one of the most enjoyable of companions and devoted of friends. In person he is under the average size, but his vitality and business "snap," never leave him for an instant; and to people who are slow and methodical he seems at least ten feet high, in the way he goes about things. The Colonel is as true to his friends as steel, and he expects his friends to be as true to him. He now and then takes a flyer in stocks, though he himself says stock speculating is not his forte. Give him the management of a team of wagons with from ten to twenty mules each, or the handling of \$250,000 of frontier accounts that are open and none too safe, and he wouldn't "shake off" with even Flood himself; but when it comes to watching Pine Street and its various vicissitudes, he says he doesn't care to turn his hair grey in the effort.

ALSOP J. HOLMES.

Here is a man who has climbed the difficult ladder of fortune from its lowest to its topmost round—climbed it, too, without aid from others; without enmities, jealousies, or strife; seeking to overreach nobody and to displace none; advancing year by year and step by step, in a resolute, quiet way. Let us see if the facts will not verify these statements. Alsop J. Holmes came overland from Wisconsin in 1850, having arrived at Nevada City, California, in September of that year. Making an inventory of his personal effects on reaching that point, they were found to consist of a suit of jean, badly worn; a roll of blankets; and ten cents in coin—but of what denomination we are not advised. Financially, he had reached bed-rock. But he had youth, energy, and a pair of stout arms left to him, all of which were at once brought into play to fairly earn the ten-dollar daily wage for which he had hired himself out. As soon as he had accumulated a small stake, he bought a claim, and, becoming his own employer, dug from it over \$3,000 in the course of two weeks. With this money he embarked in other business in Stockton; but, longing for the freedom and excitements of a miner's life, he soon gave up this new pursuit and repaired once more to the diggings, where for the next ten years he followed the career of a prospector and miner, joining in the stampedes that carried this class of men from one locality to another, until he had visited nearly all parts of the gold fields from Mariposa to Shasta. While meeting with a good share of the mishaps and ill luck incident to a miner's life, he was, on the whole, pretty fortunate—having got so far ahead in 1853 that he felt warranted in making a visit to New York that year.

In 1861, the Washoe excitement carried him over the Sierra, where, on his arrival at Gold Hill, he took charge of work on the Petaluma Quartz Mill, then in course of construction. Here he remained, building mills or having charge of batteries, until the Summer of 1863, save only a few months spent journeying to and from Idaho—an irresistible craving for new adventures having seized him simultaneously with the reported discovery of rich mineral deposits over in the Owhyhee country. He had barely recovered from this attack, when the old malady again broke out and floated him off to Rees's River, where he resumed the business of mill-builder, amalgamator, miner, etc. Leaving Austin, and perambulating through Eastern Nevada about the time the Pioche fever raged, he came back to that town, and thence journeyed across the deserts to Columbus, then a rising camp, but inhabited almost wholly by Mexicans and other good miners but shiftless sort of people. He reached that place in July, 1865, just in time to help celebrate the Fourth of July, which was done in true American style—Count Adolphus, otherwise known as A. Hank, having contributed a poem in honor of the occasion. This over, Holmes addressed himself to business, and was not long in discovering

the promising character of many of the lodes in that district, a number of which he proceeded to secure either by location or purchase—Mexican holders being willing to sell out for a little ready cash. There were in this vicinity but poor facilities for opening up and working mines. Labor and supplies were costly, wood and water were far from abundant, there were no mills, only a few Mexican arastras for reducing the ores, and the exchequer of Hohnes was by no means overburdened with funds. Nevertheless, the old stock of resolution remained in pretty good supply. His training had been of the right kind, and he knew how to make it tell to advantage.

In I. C. Bateman, then operating at Austin, he had a good friend, and to the extent of his means a good backer, the two being partners in this Columbus venture. On Holmes, however, rested the burden of the business, and to the able and faithful manner in which he carried through his work the subsequent prosperity of this entire section of country is mainly due. His first efforts were directed to the development and outfitting of the Northern Belle Mine, one of the extensive group of lodes early secured by him. The description of this mine, published elsewhere in this work, will testify to the efficient manner in which he accomplished this task. In illustration of what he effected in this remote and barren region, we can hardly do better than quote the remarks upon this point that appeared in a mining journal several years since: "It is proper," says that paper, "that we should recur to the great service rendered the district by Mr. A. J. Holmes, who for ten long years devoted himself to the business of prospecting the country and developing the group of mines in which he was interested, with an energy, assiduity and singleness of purpose never excelled by even the most intrepid of the brave, hardy and resolute class to which he belongs. Owing to the sterility of the country and the great cost of freighting in supplies, the opening up of these mines was both expensive and arduous; yet this man, with only such means as could be realized from the mines themselves, kept up the contest single-handed and alone during all this long time, never having been in a position admitting of a moment's intermission of toil or relaxation of vigilance. In persevering so long and accomplishing so much under circumstances so trying, and with means so inadequate, this heroic man has supplied an example that ought to be worth much to the pioneer prospector and miner. In the success achieved by him they may read a useful lesson, teaching the value of abiding habits and a steady application of labor in a calling, calculated to inspire those who pursue it with a restless, roving spirit, beyond all others."

This, we hold, is a good record; nor do we see how any man could well make a better, or fill a more useful sphere than this. Mr. Holmes is still engaged in extensive mining enterprises, bringing his large experience and good business sense to their furtherance. Just now he is giving his attention to the development and equipping of the Potosi group of lodes, also in Columbus District, having already engineered the same to a great success. He has also important mining interests in Arizona and elsewhere on the Coast, his busy habits and active life forbidding that he should cease to labor. Mr. Holmes' rough pursuits have not told heavily on his health, which is still vigorous; and, as he has barely crossed the meridian that marks the noon of life, he may, with his good habits, reasonably expect to enjoy his well-earned wealth for many years to come.

ALMARIN B. PAUL.

Here is an individual of whom volumes might be written and much of his active, useful and eventful career be still omitted. He is one of those many-sided men whose resoluteness, breadth of view and self-reliance, laid the foundation of the Western Empire of the Pacific. A scholar, merchant, mechanic, inventor and patriot, of indefatigable industry and push, such a man would carve his name deeply on the records of any community. In a new country, and among such a people as those who dwell in this "sunset land," with its wondrous variety and richness of resources, such a person as Mr. Paul became "the right man in the right place." To give even a comprehensive epitome of the works of such a person in a couple of pages of the *MINING REVIEW*, requires powers of condensation such as we do not possess. To give a fair biography of him in such a compass, is almost equal to the task of the man who assumed to write a history of the United States in two words, and accomplished the feat by stating "It is." No one could dispute the fact, but it was only a naked fact. Just so with such a biography as this of such a man as Almarin B. Paul. We can do little more than state the fact of his existence amongst us.

The object of our sketch was born in the State of Missouri, more than fifty years ago, and came to California from St. Louis in September, 1849, bringing with him an immense stock of merchandise, with which he commenced operations as a merchant in Sacramento, and soon became one of the richest men in the then Territory of California. Having been engaged for many years in mining for copper and silver in the Lake Superior region, it was for the purpose of turning to account his knowledge and experience thus acquired, that Mr. Paul came to California. Therefore, having disposed of his merchandise, we find him in January, 1851, working in the mines in Nevada County, which is, and ever has been, the richest quartz mining county in the State, where, as he told us years ago, although the rock averaged \$30 per ton, it did not pay to work, owing to inability to save the gold. So firmly was he impressed with the neces-

sity of improvement in the processes for saving the precious metal, that in July of 1851 he went to New York to call attention to the possibilities of quartz mining in California. Finding capital too timid to touch what it did not then understand, he returned to California in 1852, and went into business as a merchant at Sacramento. But the tame routine of trading did not satisfy him, and in the Spring of 1853, we find him bending all his energies to building up San Francisco. He continued in the real estate business here till 1856, when the famous "Vigilance Committee" of that year upset a good many things, and Mr. Paul embarked in the publication of the *True Californian*, an able and fearless advocate of the Vigilantes. In 1857 he sold his interest in the *Californian*, and went into the mining business, and erected the Oriental Quartz Mill, in Nevada County, which through the improvements he had perfected in processes in saving the gold, was a most profitable concern. He conducted the business till 1860, when the now famous Comstock mines in the State of Nevada first came into notice. Mr. Paul was among the first to perceive the value of that wonderful discovery. He it was that formed the first company to systematically work those mines. He it was that erected the first mill, of twenty-four stamps, to work the silver ores, while he contracted to reduce and extract the bullion for everybody at \$30 per ton.

In his quiet, unpretentious little office in the Safe Deposit Building, in San Francisco, may be seen the first two little buttons of silver ever cupelled from the Comstock ores, and a portion of the first bar of that metal ever obtained from these ores by mill process. These historical mementoes of Mr. Paul's enterprising skill, elegantly framed and stamped as duly authenticated documents, were presented to him by the citizens of Nevada. It was while operating in this, the first Washoe mill, that he introduced the now universally used "pan process" for working silver ores. It is a suggestive illustration of the rewards of inventors, that Mr. Paul was ridiculed and laughed at for making such an innovation in milling silver ores, as these pans. Yet to-day, there is not a mill for milling these ores in the world, that is complete without them. As he never patented this great invention, he never received any other compensation for its discovery, than the profits of working it for a few years. Such was the success of the first mill he put up, that he erected another, with sixty-four stamps, near Gold Hill, in which he invested \$250,000, an enormous sum in those days. The integrity and business ability of Mr. Paul was so generally recognized by the people of Washoe, that in 1861 he was elected President of the Board of Commissioners of Storey County, and laid the foundation for the organization of that county, which was then nearly all there was of the present State of Nevada, and he could have been elected to any position he desired, but declined all political office.

In 1865, having realized what was then considered a handsome fortune, Mr. Paul sold his mill and mining interests and embarked in the banking business at Gold Hill, and it will never be known how greatly his money helped to develop the Comstock Lode. To show how much his capital and energy had to do with developing the mines on that lode, it is only necessary to state, that when Mr. Paul sought the co-operation of the Presidents of the Ophir, Savage, Gould & Curry and Mexican mines, to systematically work these claims, they declined to invest a dollar to erect a mill to work their ores. It was a few men, whose names are now nearly forgotten, who owned what is now known as the "Imperial" ground, that gave him any encouragement. It may be stated (in parenthesis) that Mr. Paul was the organizer of what is now known as the Imperial Consolidated Mining Company.

Finding banking and money lending uncongenial to his active spirit, in 1867 he sold his establishment to the Bank of California, and undertook to develop the mines of Inyo County, California. Owing to the refractory character of these rich ores, and his determination to conquer, and compel them to yield their treasures for the use of mankind, Mr. Paul spent his fortune and years of steady mental and physical labor. In 1868, he obtained his first patents for new processes and improvements for amalgamating the precious metals, and not a year has since passed without a patent being obtained by him for such machines—some of which are in use in all the States and Territories on the Pacific Coast. He has expended nearly \$100,000 in perfecting machinery for amalgamation by a dry process. For the last twenty-eight years he has devoted his life and means to discover a process and perfect machinery for extracting the precious metals from their ores, cheaply and thoroughly. Such a man, though scarcely known personally to any one outside his circle of friends, deserves more than a passing notice in such a work as the *MINING REVIEW*, not because he has done so much to develop the mining interests on this coast, but because of his great services in other fields. He it was, while acting as Commissioner of the famous Sanitary Fund, placed Nevada at the head of all the States in the Union, for its *per capita* contributions to that fund. He collected more than \$150,000, from little more than 20,000 people.

As a writer, Mr. Paul is vigorous, clear and pleasing. His remarkable articles over the *nom de plume* of "Cosmos," published in the *Bulletin*, concerning men and things in Washoe in early days, show the vein of quiet humor that permeates his nature, while his later articles, published in various papers on the subjects of "Finance" and "Mining," show the practical common sense of the man of knowledge and experience.

His latest public service was the arranging (in connection with Prof. Hanks) the magnificent collection of Pacific Coast minerals for the Paris Exhibition. There is an instructive lesson to be learned from the life of such a man as Almarin B. Paul, and we close our brief biographical

sketch of him with reluctance, because we feel our work is not half done, though the space allotted us has already been overran.

Through his writings for the press, and over 10,000 pamphlets which he has published and distributed gratis, and which have found their way not only in every mining camp of the Pacific Coast but elsewhere, he may be considered more extensively and favorably known than any individual mining man on the whole Pacific Coast.

COL. HENRY S. FITCH.

Col. Henry S. Fitch, formerly one of our leading business and mining men, was born in Kinderhook, Columbia County, New York, something over 50 years ago. At the age of 12 he struck out for himself. Inclination led him into mercantile life. From a country store, in western New York, he advanced, in 1837, to an important position in an extensive jobbing house in New York City. Upon the breaking out of the war with Mexico, he abandoned the quiet duties of the counting-room for the hazards of the battle-field. Raising a company, he went to the seat of war as First Lieutenant, from which he was soon promoted as Adjutant of the Second Regiment; then to a Captaincy, and finally to Lieutenant Colonel of his regiment. In 1849, he came to California, across the plains; settled in San Francisco in his very infancy, where he engaged in the real-estate business. Acquiring a fortune, he took an active interest in the first movement in favor of a trans-continental railway, offering a gift of \$10,000 for the best essay upon this great national enterprise. In 1859, Col. Fitch wrote himself, a pamphlet upon the feasibility and importance of the project, which was accepted by Senator McDougall and others as the most able document which had then been given to the public. Upon the special request of some of the leading men of the State, he published another pamphlet, entitled "*State Policy in Relation to the Pacific Railway.*" This pamphlet, like the first, attracted much attention, and was chiefly instrumental in organizing public thought and leading the way to the "Pacific Coast Railroad Convention"—that Convention, in which Col. Fitch was appointed Chairman of Address to Congress, for aid in the construction of this great highway, as well as to the President and his Cabinet, whose influence it was desirous to obtain. Though this action, on the part of Col. Fitch and others, for the construction of the great Pacific Railroad, did not then result in anything more tangible than committees, resolutions and addresses; still it was the beginning—the genic movement out of which finally came the great work.

Upon the discovery of the Comstock Lode, Col. Fitch was among the first who seemed to have conception of its vast wealth. Acting upon this belief, he now turned his attention to its development. Real-estate had yielded him its benefits, and he now sought for larger remunerations in the new field. As an evidence of his enterprise and largeness of views, we find him, in 1862, at the head of mining companies, which embraced in their aggregated plans and work over seven miles of tunneling and shafting at different points along the Comstock. From that day to this he has been engaged both in mining and stock operations.

But the chief reputation of Col. Fitch must rest upon his claim as a writer upon finance. Upon this question he may be justly denominated the great Financial Pamphleteer of the Pacific. And, indeed, it is a question whether he does not rank first among all American writers upon this intricate and profound subject. His criticism of Senator Jones' first speech upon this question in the Senate elicited a request from the Chairman of the U. S. Monetary Commission to contribute his views upon the subject under consideration. This request was met by a treatise upon money, its nature and functions, which has never been equaled as an instrument of popular enlightenment. It is in truth a financial spectroscope, revealing to the dullest brain the constitution and laws of money in all their logical and equitable meanings. Under this exposition, the occult becomes as plain as the simplest problem solved, and the prosaic is transformed into a poem as entrancing as a romance. His speeches before the National Currency Convention, at Dashaway Hall, in this city, before the State Executive Committee of the National Party, and also at Platt's Hall, on April 5th of the present year, may in some respects be more valuable, because more comprehensive and more elaborate. These not only embrace all the principles and truths of his contribution to the U. S. Monetary Commission, but they evolve laws and philosophies which make not only finance an easy and fascinating study, but political economy. In his Platt's Hall address, he brings forward from the great arcana of primal truth, testimonies before which the accepted conclusions of ages fall, as did the epicycles and deferents of Ptolemy before the revelations of Copernicus.

The friends of Col. Fitch can trace with ease the lines of his thought through much of that great report which has been given to the world by the United States Monetary Commission. Not that one iota of distinction would be coveted, or one measure of credit denied the talented Chairman of that Committee, but like the chemical influences of solar light, which is found so delicately and mysteriously incorporating itself into all organic life, do we find the teaching of our subject manifesting itself like some exquisite color or pleasing perfume in almost every section of that grand production.

Finance and political economy are subjects toward which the genius of Col. Fitch turns as instinctively and freely as the needle turns toward the magnet. It is here that he finds the sweetest and most plenal rest. The love of Petrarch was not more fervid and constant

for the beautiful Avignonese, than is his for these twin sisters of an advanced civilization. John Sherman he recognizes as either a financial dolt or a traitor to American prosperity—the tool of a great Anglo-American Bank Ring, which aims to the suppression of American energy and skill, and the maintenance and upbuilding of British empire in the world's fæbriile realm. Basing our conclusion upon a fact of philosophy as well as of history, we are not backward in predicting a prominent place in the future estimation of the American thinker, as well as American masses, for Col. Fitch. He may not be called to elevated positions in political life, but his expositions of fundamental truths must find an enduring lodgment finally in the popular heart. Ideas that spring from eternal laws can no more be checked in their march to final triumph, than can the irresistible evolution of matter. Ideas born of law are omnipotent as is law itself. Ignorance may check for a time their expansion, but divinity is behind them and nothing human can permanently resist their step. So shall the new financial and economic revelations of our subject, inasmuch as they have foundation in philosophy, in the end take the place of Ricardo and even of Adam Smith; becoming with the future axiomatic and sovereign. Jealousy and ignorance may pronounce these predictions the vapors of an abnormal sentiment. But truth is truth, and no assertion can overthrow it. And why should it be thought a foolish thing to infer that finance and political economy have not yet reached their ultimate; that as now accepted, these sciences are false in postulate and in conclusion, and are waiting the coming of some great master to lay anew and philosophically their foundations, that superstructures of the divine and ideal may rise to the grandeur and majesty of civilization. And why should it be deemed foolishness to declare that that master has risen among us? Can there no good come out of Nazareth? And must public honors first rest upon the prophet before his lips shall be unsealed to the uttering of inspired revelations? The great pivotal thoughts with the race, have had their genesis in the secluded and obscure nooks and corners of the social world; and when brought into the light, they have, sometimes for a century, been shelved by the scholar and trampled upon by the throng.

To assume that the ultimate in the sciences under consideration has been reached, is to assume a clear improbability—in fact an absurdity. Adam Smith, it has been said, "laid the foundation of the freedom of industry and of unfettered commerce among States, in reason." But this great light of Oxford wrote more than one hundred years ago, and was the exponent of theories which were based in the personal and conventional advantages of aristocrats, landholders and merchant princes. The advancement and independency of the masses had no place in his systems of finance and political economy. But to-day many of the hypotheses of Adam Smith, which have been recognized as fundamental truths, are like some of Newton's, found to be simply hypothetical; vanishing in the presence of modern revelations. Col. Fitch to-day is an humble citizen of California, although a member of the National Committee of the great Greenback Party, but because of this obscurity, does it follow that it has not been given him as a high priest of thought to bring forth from mysterious and infinite depths great principles upon which may be builded a grander and more perfect industrial life? For reply, we wait trustingly for the verdicts of posterity, the results of its industry and the glories of its inspirations.

JOHN F. BOYD.

Mr. John F. Boyd, a native of Pennsylvania, was born about the year 1840. For a young man and a young operator, John F. Boyd stands among the most successful. Without being a strictly scientific engineer, Mr. Boyd is about as shrewd and careful a mining expert as can be secured to report upon mines and mining interests. He formerly was wont to travel with Gen. Gashwiler; and many a mile they traveled together in mud-wagons over the deserts of Nevada, and in the wilds of Idaho. The Bodie District has been a field of harvest for Col. Boyd. He owns a large interest in both the Standard and Bodie mines, the two dividend-paying mines of the district at present writing. He approved of Northern Belle as a mining venture, and for many months reaped a rich harvest in dividends. Some of his ventures have not been successes, but it would be an impossible task to find an expert or operator who has never been deceived by appearances. Mr. Boyd is closely allied with Gen. W. M. Lent and William Willis in his mining enterprises. Those who know place Col. Boyd's bank account and financial resources at over a million; and he is young enough to live for threescore more years.

J. M. BUFFINGTON.

In this gentleman we have one of the veterans on the staff of mining secretaries on this Coast. At the time that the incorporation of mining companies, incident to the discovery of the Comstock Lode, began to multiply thick and fast, he was, because of his clerical fitness and other qualifications for the position, chosen to serve as secretary for several prominent companies; which place is held by him still, in some cases, after a lapse of seventeen years—a fact that expresses all that need to be said touching his aptitudes and entire fitness for the business. Mr. Buffington is a pioneer, having arrived in California from Massachusetts, his native State,

in June, 1849. For thirteen months at first he followed mining, and with such good results that he was at the end of this time enabled to come to San Francisco, and with his net earnings commence a ship-cracker bakery. He went largely into the business, opening, also, a branch establishment in Stockton. Despite the reverses attendant on almost every pursuit in those early days, these bakeries, upon the whole, proved profitable, Mr. Buffington having considerable means when he retired from the business, and turned his attention once more to mining and mining affairs; for he has during all these years been largely interested as a stockholder in various mining companies, while acting as secretary for these and others. In this field of investment he has experienced, like all others who adventure here, some sharp changes of fortune, having made money and lost it, being at the present time financially well off. But no accumulations of wealth can ever suffice to drive a man of his industrious habits and active temperament into a life of inaction and ease. He likes the excitements of business—the healthful stimulus of a stirring, energetic life, and will probably be found engaged in them to the end. In his time Mr. Buffington has been Secretary of more than one hundred different mining companies, some of them of a leading character. To-day he holds that position for at least a dozen, the Union Consolidated, South Comstock, Crown Point Ravine, Chalk Bluff, Moore's Flat Blue Gravel, North Consolidated Wyoming, Golden Ophir, Gold Deposit, &c., he having held the Secretaryship of the first three ever since they were incorporated. He was Secretary of the Caledonia Company at the time that John W. Mackay was superintendent of that mine, and a very efficient superintendent he made, says Mr. Buffington.

Having filled this responsible position for so long a period and for so many companies, Mr. Buffington has, as may well be supposed, seen many striking changes, and had many strange experiences in his time. He has enjoyed the confidence of the great magnates of the mining world, has had an inside view of the secret machinery whereby stocks have been manipulated and the market worked. He has been cognizant of the pools and plans, the combinations and schemes of those who controlled or struggled for the supremacy of this great interest, but this has all been knowledge that he could neither use nor reveal, his official position imposing upon him the duty of secrecy and silence. He has seen unknown and neglected mines emerge from their obscurity and gradually ascend the scale till they had reached an overshadowing greatness, and those that stood high in favor, because of an unwonted production, pass into impoverishment and sink out of sight. He has seen ground that would not sell for a cent an acre come to be sold for a thousand dollars a foot, and *vice versa*. Stock in Union Consolidated, of which he fortunately still holds some, once went begging for purchasers at six and a quarter cents per share. To-day they are worth over \$100. Of fortunes lost and won, of anguish and joy, of hopes and fears, what stories could this veteran Secretary relate. What thousands of trembling poor have come to him for advice, what hordes of stock "sharps" have sought him for "points," what tales of disappointment, what sorrows and griefs has he been forced to hear, for they who lose are apt to betake them to the secretary's office that they may gather from him consolation or administer to him some reproof, while the successful ones rarely ever come to receive his congratulations or to express to him their thanks. In days gone by Mr. Buffington has served the public in the capacity of school director, besides filling, we believe, some other positions for which his superior education well fitted him.

HOWARD COIT.

This gentleman, who during the past ten years has occupied a most prominent position in the San Francisco stock market, is one of those few individuals whom Fortune favors by making places for which Nature has adapted them to fill. That destiny which

"shapes our ends,
Rough hew them as we may,"

brought him to San Francisco just at the time when the stock market was moving upwards to the zenith of its power, and having friends, an herculean form, stentorian voice, incorruptible honesty and genuine *bon homme*, he was just the man for the times, and has remained on the "top of the tide" ever since.

Born at Buffalo, New York, in 1840, he is still a young man. He was educated at the High School of Norristown, Pa., on leaving which, in 1857, he came to our Golden State in search of Fortune, and vainly wooed her for about three years among the orange-groves and corn-fields of Los Angeles. But not liking that sunny section of our "sunset land," he turned his face toward Arizona, with its rich mines and fierce Apaches. For five or six years he studied mining there under difficulties, his time being about equally divided between looking after his own scalp and the interests of his employers. Disgusted with that sort of business, he came to San Francisco in 1867. Here Fortune met him, and has continued to smile on him ever since. In November of that year he was elected a member of the San Francisco Stock Board, and in the following month was elected caller of that body, an office to which he has been annually re-elected ever since, and will probably continue to be re-elected so long as he may desire to retain the position as it would be almost impossible to find another man that could exactly fill his place. It is no profound scholarship, great shrewdness as a "mining sharp," or knowledge of stock manipulations, nor a good pair of lungs, a handsome, manly form, or imperturbable good humor, or eve

inflexible integrity that fit a man for the office of caller of the San Francisco Stock Board. Howard Coit has all these and something more, which inspires such respect and confidence that although he has sold more stocks than any other living man, both buyers and sellers—those who have lost and those who have won fortunes through his ministrations—are satisfied with his fairness and impartiality.

His greatest streak of good luck—that is, so far as the stockholders in the concern are interested—occurred in 1869, when he beat the field in the race for the belle of San Francisco, Miss Lillie Hitchcock, a young lady whose beauty, sparkling wit and general benevolence made her one of the historic characters of the Pacific Coast. While hundreds envy him, there are none that do not wish him well, and a happier couple do not live on this side the pearly gates of Paradise.

WILLIAM H. HOWLAND.

The individual whose name heads this article first saw daylight at Saratoga, New York, in the year 1822, and is therefore in the prime of active manhood. Mr. Howland arrived in California in May, 1850, and commenced his first labors in the mines the month of his arrival, meeting, as all did in those days, a due reward for industry. Knowing there was an immense emigration coming in, and that the most of them would have a desire to "cross the river," he conceived the idea of a ferry across the Sacramento, at Sacramento City, and by September, 1850, started, and boasts of having ferried across the whole emigration of 1850 and '51. Mining, however, was his desire, and in 1856 he located at Rich Gulch, Calaveras County, California, and there built a mill, on what is now known as the Gwinn Mine. About this time he brought out what was known as the Howland Rotary Battery, a mill which had for a while quite a run. In 1859 he started the well-known Miners' Foundry, and under the title of Howland, Angel & King it had one of the most successful runs of business of any establishment before or since. Then was a lively time, and Mr. Howland's familiarity with mining, and what was required as successful machinery, gave him the foremost rank as a mechanical mining engineer. In 1860, he went to Washoe, and out of the whirl of excitement he soon had his establishment loaded down with business. His first work for Washoe was the building of Paul's Pioneer Mill, and he claims the honor of setting in motion this, the first silver mill of the State of Nevada, besides being the bearer to San Francisco of the first Washoe silver brick by mill process. Among his other work about this time, was the building of Coover & Harris' Mill, Paul's sixty-four stamp mill, at Gold Hill, the Empire, Rhode Island, Stewart & Kirkpatrick's, De Land & Skae, also, the Wide West, Antelope, and Real Del Monte, at Aurora, as well as others in California, Mexico and Arizona. To Mr. Howland belongs the credit of first bringing out the steam bottom pan, and which made so successful the working of the Wheeler & Varney pan. In 1870 he gave up the foundry business and went to New York, returned West within a twelvemonth, locating now in Utah. Here he started the Howland and *Ætna* tunnel, in Little Cottonwood; located and worked the celebrated Flagstaff Mine, and here built for a Michigan company a twenty stamp mill. He also located and laid out the town of Park City, and in due time re-located in San Francisco, where he is making himself active at his old pleasure of handling mines and building mining machinery.

Mr. Howland is a man of great natural abilities, assuming no more than he clearly understands, and like most of the early mining men of this coast, mining has become a second nature, with a world of practical experience in mines and mining machinery; he moves on actively, for profit or loss, as the wheel of fortune may turn. With this class of pioneer miners, the love of gain is not the only incentive, but the love of venture besides; from it they study philosophy, science, and religion—though like our worthy friend, they are not apt to get over-religious—and yet absorb stability and divinity from the metals and the rocks.

FREDERICK MARRIOTT.

What are we to say in the very limited space at our disposal of a man whose career has been as long and varied as that of Frederick Marriott, Sen., the universally known proprietor of the celebrated *News Letter*? His face is as familiar to all who frequent the busiest haunts of men as the pages of his famous paper; his residence in the community dates back to the earliest pioneering times; and he counts his friends by thousands; yet so long and active has been his life that the prominent part he has played in California is, after all, but the closing scene of the drama.

Briefly summarized, the following are the principal points of a biography which might be extended to volumes with profit, instruction and amusement. Frederick Marriott and a twin brother (Colonel Edwin Marriott, late of the 57th Bengal Native Infantry), were born in the year 1805, at Enfield, now a suburb of London, their father being a lawyer of renown, who assisted at the trial of Warren Hastings. After completing a very thorough education in England, Frederick Marriott went out to Madras, and having entered the well-known house of Joseph Barrow & Co., was engaged for several years in the Ceylon pearl and cloth trade. After

visiting and residing in various parts of the East Indies, he returned to England. His early associations had been of a nature calculated to impart a literary taste, as at the house of his father he had been constantly intimate with many of the leading literary men and wits of the day. Accordingly he now gave way to his natural inclination, and became prominently connected with a number of literary enterprises, chief among which were the *London Weekly Chronicle* and the *Illustrated London News*. It is not generally known that Mr. Marriott was the projector and founder of the last-named paper, the pioneer and the most famous of all illustrated periodicals; yet such is the fact, and would space permit, we could give many curious and highly interesting particulars about the matter. Without dwelling any longer upon this period of Mr. Marriott's life we will now follow him to California, where he arrived in the *Oregon* in June, 1849. Following the example of everyone else, he first turned his attention to gold-seeking, and worked as an "honest miner" at Yuba, with considerable success. This pursuit did not satisfy him long, however, and here turned to Sacramento, and from thence to San Francisco, where he commenced business as a real-estate agent and notary public.

At that time all the world was anxious to hear news from California, but the difficulty of communication was so great and leisure of Californian correspondents so small that very little could be told in ordinary letters. Mr. Marriott saw here a chance of benefiting himself and others at the same time, and in 1856 he planned and published the *News Letter*. "Large oaks from little acorns grow." The *News Letter* consisted originally of two pages of reading matter and two blank pages to be written on by those who wished to send the news of the day and information of their private affairs at the same time and in a convenient form. The idea took well, and the paper was soon appointed the Government organ for Vancouver. Its bright, pithy utterances; its concise yet finished style; its fearless, outspoken and vigorous way of dealing with all public questions, soon made it a general favorite, and such, it is needless to add, it has remained till the present day. But though the contents of the *News Letter* are of the same sterling quality as of old, in outward shape it has materially changed. Instead of two pages of printed matter it now furnishes its readers with twenty, inside a tinted cover, besides detached illustrations. Under the wise guidance of its proprietor the *News Letter* has justly achieved a world-wide celebrity and a unique place in newspaperdom. Its course has always been to support capital, to denounce fraud, to show neither fear nor favor, and, above all, to defend the interests and good name of its loyal owner's native land. The many public services it has rendered are too well known to need recapitulation. In wit and satire it stands preeminent, while the strong sense and vigorous writing displayed in its editorials command the respect and attention of its innumerable readers. Probably no paper in America exercises more influence at home or is more sought for at home than the *News Letter*. Mr. Marriott may well feel proud of this creation of his industry and talent; but nevertheless, he does not seem inclined to rest upon his laurels. On the contrary, he is as tireless as ever in his labors, and in spite of the weight old Time has laid upon his shoulders, he continues to perform the work of half a dozen editors as well as he did twenty years ago. It should be mentioned, however, that his task is much lightened by the efficient services rendered him by his son, Mr. Frederick Marriott, Jr., who seems to inherit all his father's industry and ability. Upon him will doubtless devolve the sole management of the *News Letter* some day, and it could be entrusted to no more competent hands; but let us join with him in the hope that the time is yet far distant when in the course of nature the son must succeed the sire.

GEORGE D. ROBERTS.

As the visitor meanders along Pine and Montgomery streets, seeing the stock sights, he will not fail to notice a small-sized individual, with a big head, a quick eye, and a pleasant smile. He moves along briskly, and many men stop him, and you hear the beginning of the inquiry, "Well, George, how's—?" and you pass on, unless inquisitive enough to stand by and hear what is going on. This little man, with the big head, the quick eye, and the pleasant smile, is George D. Roberts, the well-known operator, erst of Grass Valley, where he schooled himself in mining and the arts thereof. "George," as his friends call him, is a pleasant gentleman, but occasionally he gets riled, and when riled he isn't pleasant to tackle, as his brothers John and Joe—who know him pretty well—will tell you. Mr. Roberts is a mining operator in the large sense of the word. He believes in big things. He believes that it is possible there may be a bonanza even under the bay of San Francisco, and, once enthused on the subject, would go after it with the same patience, enthusiasm, and confidence that he has shown in following a dozen chimeras. He has been successful—eminently successful. He has failed, and been eminently a failure. Strike the balance—charge profit and loss—and George comes out away ahead on his mining ventures. When a man is called "George," or "Jim," or "Joe," it argues social familiarity and friendship. Those who call Mr. Roberts "George" are his friends, although perhaps a few outsiders follow the fashion. George Roberts might well be taken by more pretentious and presuming stock operators as an example. Whenever he says, "Buy this stock on my say-so, and I'll see you don't lose anything," it is safe; for George never went back on his word in his life; and there are but few men in the market who have made so much money for others as Mr. Roberts—and this

without making any for himself. Grass Valley was too small a field for the operations of such a man as Roberts. He remained there until he concluded that gold quartz was nothing to silver ore, and the Comstock found him an early, as since he has been a consistent, enthused friend of the lode—believing at times even in impossibilities. Then came the reaction, and he turned his attention to pastures new—the reclamation of the tule, swamp, and overflowed lands of the State; and for several years he devoted himself to this development of the State's resources, with a determination and energy that finally resulted in the demonstration that these lands are the most fertile, the most productive in the State. Mr. Roberts is now largely interested, being associated with Gen. Thomas H. Williams, in the reclamation of large tracts in the basins of the Sacramento and San Joaquin Valleys. But while Mr. Roberts, in his office, was calculating how many bushels of wheat this or that reclaimed tract would produce to the acre, and what the chances of overflow were, had been, or would be, on the levee question, he kept a small portion of his left eye on the Comstock; and, as we go to press, he has been almost a constant resident of the Comstock for a year—coming down only occasionally to see somebody to whom he can't write. He was the moving spirit in the big Lady Bryan deal of years ago; he was the power that raised Julia from nothing to big figures. We hope he has been successful in his ventures. He certainly deserves it. We don't know how Mr. Roberts stands as to age. If asked, he would say, "Guess!" and laugh your guess away with his usual pleasant way. He is good for many years to come. Not very handsome, he has a genial nature—a big heart, too big for his own success; and is happy as the father of a family—wife, and a sweet, happy, sunshiny little girl, the joy of his heart. When at home, he resides in Oakland. When in Virginia, he either luxuriates at the select restaurants or hibernates with the miner—taking pot-luck as it comes—serene, confident, self-possessed. No man could wrong George D. Roberts with impunity; and George D. Roberts would never wrong any man.

THOMAS COLE.

Who does not know Tom Cole, the President of Miss Julia? Mr. Cole has been in the mining arena many years—jovial to a fault, honest as the sun, true as daylight to his friends, of which we can say are legion. We wish that there were more such Presidents as Thomas Cole. Mr. Cole has not, like some, made money out of his friends. He has given the plain, unvarnished statements as they appeared always—no embellishments, no subterfuge used to puff his mine, but always gives, as he sees or hears, for himself. Some might say this is not good policy; it may not be, but he has the satisfaction of knowing, that when he tells a man what he knows that he can be depended upon. Mr. Cole is also the President of the Endowment and Ward Consolidated mines, to which he gives his personal supervision, and whoever is on California street each and every morning, at 9 o'clock, can safely say that the honest, open face of Tom Cole will be met with going up to sign his autograph as Thos. Cole, President of Julia.

LESTER L. ROBINSON.

Prominent in the history of San Francisco is Lester L. Robinson, the present owner of the well-known and much contested Rancho de Los Medanos, on the San Joaquin river, whereon are three towns and we don't know how many acres of grain and hay, and other truck. Mr. Robinson is by profession a railroad engineer, and in his time has built many railroads, and surveyed many more. Tennessee and Kentucky know him well as a railroad engineer: so does Canada and New York and the Grand Trunk Railroad. Coming to California when railroads were unknown; when the stage, mud wagon, prairie schooner, and pack train had to supply the transportation of the argonauts and their descendants, Mr. Robinson built the first railroad ever constructed in California, from Sacramento to Folsom, and his first locomotive, still bearing his name, can yet be seen puffing in and about the Sacramento Valley station as big as life. The road earned a great deal of money, as its Folsom terminus was necessarily the station whence the heavily laden stages took their freight of passengers, and whence all transportation was shipped to the then already excited Comstocks. Presently, however Mr. Robinson turned his attention to real estate and mining, and became identified with the once important house of Pioche, Bayerque & Co., of which for years he was the special manager. Millions were expended at his suggestions, and millions came back as the fruits of his shrewd judgment. With the death of Mr. Pioche the active administration of his connection with the house ceased, and Mr. Robinson entered upon a career of industry and enterprise for his individual concern. He became largely identified with the North Bloomfield and other gravel and hydraulic mining interests of Nevada County, with Sam. Butterworth, Barron, of Barron & Co., Thomas Bell, W. C. Ralston, F. L. A. Pioche and others. Of all the original of North Bloomfield, now that it is a success, only Robinson and Bell remain: Pioche, Bayerque, Ralston, Barron, Butterworth, Brenham have all gathered themselves to their last resting places. Mr. Robinson is identified as President with the New Coso, Leeds, Albion and other mining companies that are on the market; with the Alacran and other mines in Mexico, which are pro-

ducing largely. Mr. Robinson is noted specially for his administrative and executive ability. He follows up the slightest detail or incident; he can figure up the cost of extracting and reducing a ton of ore to a nicety. Socially Mr. Robinson is affable and popular. He has not (as yet) succumbed to female wiles and blandishments; is a well preserved, healthful gentleman of some—well say fifty-five—summers, and bids fair to outlive even the scribe who so sets down his record.

WILLIAM H. WATSON.

The subject of this sketch, William H. Watson, Esq., is Secretary of the Alta, Lady Washington, Succor, Benton and Boyle mining companies. To speak of "Uncle William," as he is familiarly called by his friends, who are legion, not only in San Francisco, but also in Esmeralda County and Virginia City, we can only say he is a man who is universally respected. As a mining secretary, it is needless to speak of. Being connected with the Alta mine since its first organization, and being located for the past ten years in one office as secretary, we can say for Uncle Billy that, in after years, when his race as a mining secretary is run, it will be hard to fill the place now occupied by the genial, obliging and pleasant Uncle Billy Watson.

HENRY JANIN.

Henry Janin is well known all over the Pacific Coast as a mining engineer of repute, and a mining operator who has been reasonably successful in his ventures. The Janin family is quite numerous—there being four brothers, all mining engineers—Louis and Alexis being specially known. All are graduates of the German schools, and each enjoys the confidence of those who most deal in mines. As a mining engineer, Henry Janin has made large fees in reporting on various properties. Cool as a cucumber, with a temper that could not be ruffled by almost any breeze; self-reliant, determined, and confident, it only requires a little more energy to develop an infallible judgment. His favorable report on the well-remembered "diamond job," put up by those princes of scoundrels, Arnold and Slack, was the result of his too confident nature. Instead of digging himself for the precious stones, he allowed the frauds to do the digging, and it was a success. This failure was mortifying to Mr. Janin, and since then he has been less inclined to follow the business of experting. When he goes anywhere, it is always with the understanding that the mine must be a d—d good one on merit; and the regular fee for examination must be a large one, or the contingent fee sufficient to make him a handsome return. Of recent mines approved by Mr. Janin, and placed at handsome figures, were the Home Stake and Golden Terra mines of the Black Hills. As an operator, Mr. Janin is very conservative. He always wants to get in at bed-rock; and when a good profit stares him in the face, he cannot resist the temptation. He is not a stayer, but, having realized on one, is ready for another venture. As a result of his operations, he can draw his check to a comfortable degree. He accommodates himself gracefully to a given situation; lives well, on the best of the land; drinks only the best of wines, and smokes only the best of cigars. Aristocratic in his tastes, gentlemanly in demeanor, and careless of the opinions of those he does not esteem, Mr. Janin enjoys the confidence of those who appreciate merit and worth. The ranks of mining engineers are graced by such gentlemen as A. J. Bowie, William Ashburner, Louis Janin, E. G. DeCrano, Thomas Price, W. S. Keyes, Clarence King—last but not least is Henry Janin. Mr. Janin bears his thirty-eight years with becoming youth. He is a native of *La Belle Louisianne*, and proud of the land of his birth.

AMOS C. HIESTER.

Mr. Hiester is one of the proprietors of the *Daily Stock Report*, and is also President of the San Francisco Board of Education, two positions which bring him prominently before the public. Mr. Hiester is a printer by training, and for a number of years worked at the case, but his energy and ability, coupled with a natural genius for the business of publishing, soon enabled him to branch out in a more extended field. Mr. Hiester has for twenty-five years been engaged in publishing newspapers. He has established several journals, but for the past five years has devoted his time and energies to the *Daily and Weekly Stock Report*, out of which has come, with the intelligent aid of his genial partner, Mr. Bunker, a most valuable and prosperous business. Mr. Hiester was born in Ohio, and is descended from the somewhat famous family of that name in the eastern part of Pennsylvania. He came to California many years ago, married here, and has reared a large family of children. He has for a number of years taken a lively interest in educational matters, and in 1877, the Democrats nominated him for the important position of School Director. He was elected by the largest majority of any man on the ticket, and in recognition of this vote of confidence, his fellow-directors unanimously elected him President of the Board, a position which he has filled with marked ability and conscientious regard for the public welfare. This year Mr. Hiester was nominated by the

Non-Partisans as a member of the Constitutional Convention, and though the whole ticket was defeated, he got the highest vote of any man on it save one. These are all indications of the esteem in which Mr. Hiester is held by his fellow citizens, and they also give rise to the belief that he will yet receive higher proof of public regard, in his election in the near future to some more important and responsible position. Mr. Hiester is about 43 years old, but doesn't look over 35. He has a splendid physique, and is possessed of great personal courage and strength. He has had a fine business training, and his success in his important public office is due in no small degree to his careful and methodical habits.

THE STOCK PERSONNEL OF THE "CHRONICLE" AND "POST."

To our list of personal sketches, we would not forget to add at least two of the representatives of the Press, Charles G. Noyes, of the *San Francisco Daily Chronicle*, and Edward S. Spring, of the *Daily Evening Post*.

These two gentlemen are the editors of the stock reviews, which daily appear in the above-named journals, with which they are connected. Probably the pens of no two men have a more potent influence than do theirs. The circumference of their power may not be as broad as that of some other writers, but their potentiality is vastly more strong and intense, especially with that speculative class whose hopes so largely center at our Stock Exchanges, and which, numerically, reaches into the tens of thousands scattered not only over our own continent, but even over some portions of Europe. No reports, whether of battles, of riots, of epidemics, or catastrophes; whether of international congresses, mass meetings of workmen, or of religious or social conferences, are looked for with half the anxiety, and read with half the interest by the particular class for whom they write, as are the reports of these editors, which form so unique a feature of modern San Francisco journalism. Upon their dictas and suggestions daily hang directly and indirectly not only the material fortunes of half a million of human beings, but the ambition, the health, the morality and happiness of this vast throng of speculators. Their pens, like the wands of rival necromancers, reach down alternately into the hearts of thousands, to inspire with hope or to depress with fear. They are to a great extent the sovereign masters of an immensity of passion, which rises and falls in violent paroxysms with the advances and declines of the mining Stock Market.

Our first subject, C. G. Noyes, is a native of Rochester, N. Y., and has the good fortune to be the nephew of the late General Sedgwick, of the U. S. Army. His ancestors are of Puritan stock—an ideal blood with him—and figure conspicuously in the early history of Connecticut. Self-reliant and ambitious, he left the paternal hearth-stone at seventeen, and commenced life as a surveyor in the far West. Afterwards, he engaged as a farmer; but the California gold excitement turned his face westward still, and in 1853 we next find him swinging the pick in the rich gulches of Old Tuolumne. Graduating as a first-class miner, he next became a manufacturer of lumber, which, after nine years of industry, gave him a bank account of \$60,000. On this snug sum, he ventured, in 1863, upon Montgomery Street, of this city, as a money and stock-broker in connection with A. W. Whitney, a firm which rapidly rose to first-class importance. A subsequent financial reverse, however, sent him, in 1872, into journalism, that most fickle of all callings. He became a part owner of the *Republican*, which, under his lead, engaged in the great fight against the St. Louis and Atlantic railway project, engineered by Pickering, Fitch, Sneath & Co. Rumor claimed that C. P. Huntington, of the Central Pacific, was the chief backer of the *Republican*. Huntington, it was maliciously asserted, found the money, and C. G. Noyes the "brains and the fight." The truth of the first assertion is in all probability a sealed problem. The last is patent to all who are personally acquainted with our subject. The daring and the relentless "push" of the old Sedgwick spirit is manifest in the antagonisms of Mr. Noyes, whether as the manager of a newspaper or as a Stock editor. Probably, as a Stock critic, he has no living equal as it regards boldness of declaration, bitterness of criticism, and power of description. The Stock column of the *Chronicle*, under his inspiration, has been a lance of fire that has burned as well as impaled the conscientiousless manipulator. None but those without nerves or with a paralyzed manhood have been able to stand erect before his fearless and desolating assaults. To measure correctly the efforts of the *San Francisco Chronicle*, with C. G. Noyes as its Stock editor, to protect the public from the plundering schemes of "wild cat" managers, is impossible. This is a work that must be left to a higher than a human judge.

The second and last subject of our notice, Edward S. Spring, is another of those geniuses so rarely found in the special line under consideration. Entirely the opposite of his compeer, he is nevertheless a power in the mining-stock world. His pen is not only graphic, but facile and "liquid." It creates with an ease that seems without parallel. Fecknity is its fault, if it has any. Though bold and fearless, it is yet peaceful; ever ready, however, to make war when a warlike policy seems best. Having the reputation of being *en rapport* with the great bonanza firm, Mr. Spring is looked upon as the "Court" reporter of stocks; a fact which gives his fore-shadowings of future policy and declarations of present movement the semblance of authority.

C. G. Noyes is the Ben Butler of the stock field, with his hat full of bricks and his quiver full of arrows. E. S. Spring is the John Sherman, with his heart full of syndicates and his vision

full of gold. The first is revolution incarnated; the last is conservatism embodied. The first is Kearneyism intensified; the last is capital monopolized. The first believes his mission is to reform, and to defend the people; the last conceives it his duty to check plebian innovations and to "uphold the throne."

Edward S. Spring is a native of the old "Bay State," born in 1854 in the town of Brighton, almost beneath the shadow of Faneuil Hall. Of his Puritan ancestry, like his contemporary, he assumes the pride of the descendants of Pocahontas. It is royal blood, in his estimation of worth, sent to build and conserve the Republic. Before his appearance among us, he was connected with the Boston Press. This moral educator and financial exponent of the "Hub" is with him the real revelation of the perfect. 'Tis the ideal towards which he believes all journalistic genius should gravitate.

In 1875 he took chief charge of the stock column of the *Evening Post*. Since then, therefore, he may be recognized as the party responsible in this department for all defects, and the creditor of all perfections.

Both our subjects are yet far eastward of the meridian lifeline. The former, however, stands several degrees up the arc in advance of the latter. Scoring 42, the refracted rays of the coming evening sun, it is true, are just now beginning to fall over the line of the zenith in faint glow upon thinning crown. Otherwise, the touches of Time are nowhere seen in their marks of approaching decay. The latter is still in early ascension, with the dews of the morning upon his forehead. The fragrance of Boston Common and the incense of the Sunday-school of "Old South" still cling to his robes, and give promise that all is not yet lost in this new age of immoral fermentations and of social degeneracy. A moral model and a cranium full of active brains, Edward S. Spring gives promise of a broadening and more marked influence, before his feet shall finally touch the margin of shadows that fall from beyond the boundary of the unseen.

J. W. PEW.

This young man, though not long in the business, fills the position of secretary to a larger number of active, live mining companies, perhaps, than any other person in the city. As some of these stand in the foremost rank, devolving heavy responsibilities and arduous duties upon the secretaryship, the incumbent must necessarily possess qualifications of a corresponding order. If Mr. Pew is not fitted to fill a position of this kind with acceptance, he certainly ought to be, for he has been trained in a school specially calculated to prepare him to discharge its duties well. Born in Gloucester, Mass., where he was educated and inaugurated into business after the New England standard, he came while yet quite young to this coast, and accepting a situation in the office of the *Sacramento Union* held the same for a number of years. This was when that journal was a power in the State, and none but men of character and ability could hold a position of great trust upon it. From the time he left the *Union* till 1876, when he came to San Francisco, Mr. Pew acted as paying and receiving teller in D. O. Mills' bank in Sacramento. Since coming to the city he has given his attention wholly to the business in which he is now engaged, and in which his talents and worth are likely to meet with entire appreciation, the several companies whom he is serving reposing unlimited confidence in both his capacity and integrity.

THE DAILY STOCK REPORT.

Nearly all the daily newspapers of San Francisco pay more or less attention to the publication of the information concerning mines, and the reports of mining stock transactions. But the paper that makes a specialty of these subjects, and by reason of that is recognized as the leading journalistic authority on such matters, is the *San Francisco Daily Stock Report*. The *Stock Report* is published every week day in the year at half past twelve o'clock, or immediately after the adjournment of the morning Boards. It is a large quarto sheet, about the size of the *Evening Bulletin*, and is filled with complete official lists of Stock sales at all the Boards, the latest official intelligence from the mines, giving the progress of their development, bullion yield, future prospects, etc., and the freshest and most entertaining gossip in Stock circles. It also has a daily review of the market that has come to be a feature, because of its impartial and conservative tone. In addition to these subjects the *Report* makes a feature of spicy and brief editorials on general subjects, telegrams, city news, personals, and, in fact, is replete with everything of interest to the general reader.

The *Stock Report* was established in 1863, and is the oldest daily paper of its class in America, if not in the world. Weekly stock and financial papers are plentiful enough, but a daily it was never thought could be made profitable until the *Stock Report* tried it, and won great success. It was small at first, but it grew rapidly, and was a financial success from the very start. It gradually extended its scope until now it has become the organ of the miner, the banker, the investor and the speculator. Its present proprietors are the *Stock Report Publishing Company*, of which Mr. William M. Bunker and Mr. A. C. Hiester are the managers and the chief stockholders. Mr. Bunker is a well known and experienced journalist of San Francisco,

having served a long while, and received a splendid training in his profession on the staff of the *Evening Bulletin*. He is the editorial manager of the *Stock Report*, while upon his associate, Mr. Hiester, devolves the business control of the establishment. Mr. Hiester is one of the oldest journalists in San Francisco. Since 1856, when he arrived here, he has been connected in some way with the publication of newspapers, and has been a success wherever he set his shoulder to the wheel. His long connection with the *Stock Report*, having been with it almost since the paper was founded, has in no small degree contributed to its success. In 1877 Mr. Hiester was elected a member of the San Francisco Board of Education, by a larger majority than that received by any other candidate, and subsequently when the Board organized was unanimously elected its President, a position which he still fills with consummate tact and ability.

The mammoth printing house of the *Stock Report* Publishing Company is located at No. 16 Lienesdorff street, near Pine, in the very center of the financial and speculative section. It possesses type material, machinery—all of the value of \$150,000, and connected with it is a magnificent job printing office, at which most of the printing for mining companies is executed. The *Weekly Stock Report* is issued every Friday. It mostly circulates at the East and in Europe, but also has quite a subscription list in Mexico, China, the Sandwich Islands and the Australian Colonies. It has in addition quite a large list of readers in the interior. It is a handsome eight page paper, and is the best weekly exponents of the mining and stock interests now published on the coast.

The preceding paragraphs make bare reference to the features of the *Daily Stock Report*, and to dismiss the subject without an extended explanation would imply a lack of knowledge regarding the history of Pacific Coast mining and financial operations. This history does not exist outside the columns of the *Stock Report*. For years it was the only newspaper making a specialty of mining and financial news, and, to-day, it occupies the proud position of being the only newspaper in the city that can show a record of the stock transactions since the organization of the San Francisco Stock and Exchange Board. Having had a wide experience in journalism, we are in a position to state that rarely has a newspaper legitimately advanced at such a rate of speed as has characterized the progress of the *Stock Report*. Its projectors had no adequate conception of its ultimate power when they first launched it upon the journalistic sea. They merely designed giving the brokers a weekly circular, containing the current quotations of stocks in the San Francisco Stock and Exchange Board, the original institution of the kind in the city. For a few months the *Stock Report* appeared in circular form, and was about the size of a sheet of letter paper. As the mining interest developed, and the practice of dealing in stocks increased in popularity, the *Stock Report* gained importance, and soon achieved the dignity of a daily newspaper. The high, social and professional standing of its proprietors, and their strict application to business, combined to make the *Report* successful beyond other dailies. When the bears made the great raid on the Comstock, about two years ago, the *Daily Stock Report* was the only newspaper in San Francisco that had the courage to stand by the people and the mines, the enterprise to secure reliable news from the Comstock, and the ability to discuss that news with accuracy and intelligence. Its owners were not and are not mining men, in the usual acceptation of the term, and their articles upon stock and mining matters have, therefore, wielded immense influence. When the *Stock Report* denounced the men who were striving to wreck the stock market and ruin the community, at the time of the great break in Consolidated Virginia, it earned the gratitude of thousands of stockholders who, to-day, hold it in grateful recollection. Its integrity and boldness are very generally accredited with having warded off one of the heaviest blows that was ever aimed at the mining interest of the Pacific slope. The appreciation of the *Stock Report* by the public is perhaps best evidenced by the advertising pressure upon its columns and the unprecedented increase of its circulation. On several occasions, during the last two years, the *Stock Report* has been enlarged to meet the pressing business demands upon its columns, until, at present writing, it is the third daily newspaper in the State in point of size. Appropos of the reliability and enterprise of the *Daily Stock Report*, we cannot furnish a more fitting illustration than is found in the accompanying extract from its columns. The paragraph which we quote is from the *Daily Stock Report* of July 9th:

"We have entered upon a new era of stock speculation. Its outcome cannot be pictured; for the reason that the circumstances surrounding its beginning are partially shrouded in mystery. But the fact that we have entered upon a new era, a favorable era, if you please, is in itself a matter for congratulation. The fear and despondency which were prominent factors in the stock market for three years, have almost disappeared. There has been a cleaning up and a cleaning out. The market has been attended with a series of disasters, and in their onward course the waves of destruction have swallowed many dealers. But the past, practically speaking, is dead. Its hopes and fears, its troubles and tribulations, have nothing to do with the present. These are cold facts, and, though we say it with keen sympathy for the unfortunate, the sooner dealers make up their minds to the new order of things—the new dispensation, so to speak—the better will it be for them. Fortunes will be lost and won, as of old, but the general market bids fair to be more favorable to dealers than it has been before for three years. The prospects of the mines and the actions of the bearish operators fully warrant the belief that the season of inactivity is over, and that, from this time forward, we are to have an excited market,

with the chances in favor of a big rise. As stated in yesterday's *Report*, it is the opinion of some of the shrewdest and most conservative operators, that an ore body, extending from *Ophir on the south, to and into Sierra Nevada on the north, will be speedily developed*. The existence of an ore body in the Ophir is already determined beyond the peradventure of a doubt, and, according to our information, an ore body has been struck in Sierra Nevada. It is surmised that the Ophir and Sierra Nevada developments are of one body of ore. But this fact remains to be determined."

Thus the *Stock Report* foreshadowed, in its leading stock article, the great excitement in stocks which now thrills the community. It is somewhat remarkable that a newspaper, holding such a prominent position in mining and financial circles, should combine such accuracy and conservatism. But the fact is, Messrs. Bunker and Hiester cannot afford to mislead the public, or allow any known shams in the market to go unexposed. These gentlemen have first-class reputations to sustain. The special excellence of the *Stock Report* in the matter of its reports of sales, is due to the fact that Mr. Bunker has entire charge of the official reports of the San Francisco Stock and Exchange Board, and has in his employ a corps of experienced clerks. The reports of the Board have been issued under his immediate direction for three years.

O. H. BOGART.

The subject of the following brief remarks, was born in New York city, in 1830. After completing his collegiate life, having graduated at the University of New York, in 1849, he entered a large commercial house, first as bookkeeper, having been afterwards made cashier, and there remained until 1852, when he came to California. Since his arrival in San Francisco, where he first engaged in commercial pursuits, he has followed a number of vocations, having experienced the vicissitudes common to most early adventurers on this coast. Indeed, it may be said that Mr. Bogart would seem, for a young man, to have courted fortune through the channels of a great variety of occupations in his day. Thus, from at first dealing in drugs and other less deadly stuffs, he next embarked in the business of selling firearms, fishing tackle, and things that sportsmen most affect; having, during the interim, made a short visit to his old home in New York. On returning to California, he essayed the rôle of stock-raiser, having purchased a part of the National Ranch, Monterey County, for this purpose. Finding that his talent did not lie in this direction, there being little profit in bovine culture, he abandoned pastoral pursuits, and, coming back to San Francisco, opened here a branch of the well known house of R. H. McDonald & Co., wholesale druggists, which business he conducted successfully until 1871, when he opened a commission store on Davis Street. This he occupied for a year, when he was elected cashier of the Pacific Bank. This position, after an acceptable service of three years, he resigned to enter upon the calling of mining secretary and operator in mines. His present place of business is at 106 Leidesdorff Street, where he has an agency for negotiating the purchase and sale of mining properties, shares, etc.

As a capable, trustworthy business man, he stands in the foremost rank, enjoying the entire confidence of all who know him.

CORNELIUS O'CONNOR.

Cornelius O'Connor, capitalist, is not and never has been a stock speculator, in the ordinary acceptance of the term, but we are free to say that few men are as well and favorably known in mining circles. Many of the most successful stock operators are so closely identified with Mr. O'Connor in the handling of extensive real-estate enterprises that this gentleman has come to be looked upon as a part and parcel of the mining community. Mr. O'Connor was born in Ireland, but, at the tender age of eight years, came to America with his parents, who settled in Quincy, Mass. He was reared and educated at Quincy, and, if we mistake not, acquired his trade there, that of a builder. In the Winter of 1852-3, Mr. O'Connor left his New England home for California, and ever since the Spring of 1853 his home has been in San Francisco. In the early portion of his career in this city, he was agent for Captain J. L. Folsom, one of the heaviest real estate owners on this coast, and, at a latter date, he occupied a still more responsible position as agent for the great law firm of Halleck, Peachy & Billings. During all these years, Mr. O'Connor was not only managing the real-estate business of the gentlemen we have named, but, at various intervals, he superintended the construction of business blocks and warehouses, and carried out important real-estate transactions on his own account. His intimate social relations with the members of the great bonanza mining firm, covering a period of 20 years, and his high reputation for integrity and sagacity, led those gentlemen to solicit his assistance in the management of their immense real-estate interests. Indeed, it is generally believed, that the real-estate investments of the firm, which involves the use of millions of dollars, and have been attended with unvarying success, were largely made under the direction of Mr. O'Connor. He has had entire charge of the city real-estate interests of the firm for over ten years, and it is probable that this great trust will repose in him for many years to come. Among the notable

buildings erected under the direction of Mr. O'Connor, the Nevada Block, on the northeast corner of Montgomery and Pine Streets, and the stately edifice of the San Francisco Stock and Exchange Board, on the south side of Pine Street, take first rank. The Block cost \$500,000, and the Exchange building about \$700,000. These buildings do credit to Mr. O'Connor's building skill. They furnish standing references as to his ability.

Nature has given Mr. O'Connor a good physique, a good strong head and an eminently amiable disposition. He is our jolliest millionaire, and no one can begrudge him his fortune, his pleasant home and robust health. Mr. O'Connor is married, and has an elegant residence in the city.

EDWARD F. HALL, Jr.

Edward F. Hall, Jr., one of the leading stockbrokers, whose name is a synonym for integrity and strength in financial circles, is a native of Boston, Mass., and, we may almost unhesitatingly add, he counts no greater distinction of birth than that of being a Boston boy. He enjoyed a liberal scholastic training and was equally fortunate in his business education. His first knowledge of mercantile operations was obtained in the great house of H. A. Pierce & Co., Boston. The keenness and sagacity of Mr. Hall must have been developed at an early age, for only a short time elapsed before the firm offered him the position of supercargo on a ship bound for the agency of the house on the Amoor River. Mr. Hall accepted the appointment and was induced to remain at the Amoor River agency. At the expiration of three years he left the agency, with an excellent record, and it was his intention to resume business in Boston. While *en route* for home *via* San Francisco, early in 1860, Mr. Hall had an inviting opportunity to enter the wholesale shipping and commission business here, and hence it was that he made this city instead of Boston, the scene of his later operation.

He conducted his mercantile business until 1867, when he entered the San Francisco Stock and Exchange Board and laid the foundation of the house of Ed. F. Hall & Co. His success in the stock business has been remarkable in more than one respect. First and foremost he has never failed. His house has weathered storms that have shaken the financial community for centre to circumference. He can point to the history of the stock market, and, altering the poet's lines, quietly remark :

Men may come, and men may go,
But we go on forever.

About four years ago Mr. James R. Keene, the financier, associated himself with Mr. Hall as the special partner of the firm of Edward F. Hall & Co., and the connection, which has proved mutually advantageous to these gentlemen, has never been severed. The business of the house of Ed. F. Hall & Co. amounts to millions of dollars per month, and is entirely and emphatically under the direction of Mr. Hall, whose bustling enterprise gives tone to the establishment and satisfies the most importunate customers. During business hours Mr. Hall is essentially a business man, but there is no member of the Board who has a keener appreciation of humor, or who possesses a greater amount of genialty. Mr. Hall's appearance fixes his age at about thirty-five. Our sketch of his career would be incomplete, if we failed to refer to his standing outside of business. As a citizen, Mr. Hall is noted for his public spirit, his decision of character, and his cultivated tastes. Mr. Hall is a benedict, and has a luxurious home in San Francisco.

WILLIAM H. BOOTHE.

One of the most elegant men known in mining stock circles on this coast is the young gentleman whose name heads this sketch. Mr. Boothe is the Secretary of the Silver King Mining Company, and the confidential business agent and adviser of Col. James M. Barney, of Yuma. He is also the owner of several silver mines in Arizona, and the head and front of a number of mining enterprises in the same Territory. He has a magnificent suite of offices in the Williams Building, over Wells, Fargo & Co.'s Bank, which are a kind of headquarters for the leading miners and capitalists of Arizona. Mr. Boothe is a Kentuckian by birth, and is a member of one of the bluest-blooded families of that State. When a boy, during the last year of the war, he showed his patriotic spirit by enlisting in the Navy; but, as the war closed in not many months thereafter, he obtained an honorable discharge and turned his back upon the sea forever. Seven years ago, he came to this coast, and soon after became connected with Colonel Barney in the capacity of confidential secretary, and that position he has held ever since. When the Silver King Company was incorporated, he bought a considerable interest along with Colonel Barney, and became its Secretary, and in a certain sense its business manager; and it is to his careful and prudent forethought that the Company is largely indebted for the confidence with which the Silver King is now looked upon in mining circles. Mr. Boothe is not over thirty years old, but he has already acquired a considerable fortune. He is a bright and particular star in social circles, is one of the pillars of Trinity Church and Sunday-school, and is the life of every fashionable gathering in the city. He is a liberal patron of the

fine arts, an ardent student of English literature, and is devoted to the fair sex, with whom he is a universal favorite. Mr. Boothe lives at the Palace, drives a magnificent pair of Kentucky-bred mares, and has an income of from \$2,500 to \$4,000 a month. He is looked upon as a great "catch," but, if rumor be correct, will ere long be withdrawn from the matrimonial market. He is a devoted friend, his noble and disinterested acts of kindness being numberless. His modesty is as conspicuous as his generosity; and if any one wants to find out what his right hand is doing, he must never ask his left. Boothe will be a millionaire some day, and to nobody could wealth ever come who will make a better or more noble use of it. He is a prince among men, and an honor to the State which reared him.

WILLIAM M. BUNKER.

Mr. Bunker is chief proprietor and managing editor of the San Francisco Daily and Weekly *Stock Report*—the oldest and best known authority on stock and mining matters in California. Though a young man, Mr. Bunker has shown himself a most capable manager of a large business enterprise; and the conservative tone of his writings has built up for the *Stock Report* a reputation for impartiality and reliability second to no journal in the country. Mr. Bunker was trained in journalism in a thorough school—the San Francisco *Evening Bulletin*—and under the watchful care of such veteran editors as Messrs. Fitch and Pickering, he acquired such a knowledge of his profession as few men get at his age. Mr. Bunker went on the *Bulletin* as a boy in the composing-room; but he had too much capacity to remain in that position long. A series of letters on California politics appeared in an Eastern paper in 1864, and attracted so much attention, by reason of the superior knowledge of affairs shown in them, their delicate irony, and their clear estimate of the men who were at the head of State politics at the time, that they were copied into and commented upon by nearly every journal in the State—the *Bulletin* clipping from them more eagerly and commenting upon them more appreciatively than any other. A good deal of curiosity was shown about this time to learn who was the author of them, and by an accident young Bunker was discovered to be the Junius everybody was in search of. After that there was no more setting of type for Mr. Bunker. He was at once invited to a desk in the editorial room; and, at the end of an uninterrupted connection with that department of over ten years, he found himself city editor of the paper, and in the enjoyment of an authority second only to that of the proprietors. During that time, he had filled many important trusts, not the least of which was his somewhat noted mission as the *Bulletin's* correspondent throughout the Modoc campaign of 1873, in the famous lava beds, and the region about Lake Klamath. Recognizing that he had got to the top round of the ladder in a subordinate place, Mr. Bunker purchased a controlling interest in the *Stock Report* publishing establishment, and has now, during the few years of his connection with it, brought it to be one of the handsomest journalistic properties in California. Mr. Bunker, as we have said, is quite young—he cannot be much over thirty—but he has evinced qualities in his professional career that belong to riper years. He is a genial, pleasant writer, an affable and courtly gentleman, and no greater favorite is to be found in all the newspaper profession than he is among mining men and business men generally. Mr. Bunker is a native of Nantucket, Mass.; and, by the exercise of the same prudent thrift and wise economy that are inborn in the people of that soil, he has, at an early age in life, acquired a handsome competency. Mr. Bunker is married, and is a devoted adherent of the home circle.

GEORGE W. KIDD.

A small-sized man, with a clean-shaved face, neatly dressed, fine diamond studs glittering in his shirt-bosom, is Capt. George W. Kidd, a well-known operator in the Stock Boards, owner of mining interests, bank director and manager. Capt. Kidd has had rather a venturesome life. He didn't get much of an education from the old folks, and about the earliest thing he can recollect was being cabin-boy on a Mississippi steamboat at \$8 per month and found. There he got his first ideas about steamboating, which practically he illustrated years after on the Sacramento River, by building opposition boats to the California Steam Navigation Company—the "Washoe" and "Nevada," both of which met with fatal accidents. The "Washoe" blew up, the "Nevada" was run into and sunk by one of the monopoly boats. But Kidd was plucky, and the loss of his pet steamboats did not set him back a cent; for, being successful in some of his mining ventures, he soon came to the front as the captain of a new craft—the Bank of Stockton—which has since remained under his care and control. Every Friday afternoon or Saturday morning, Capt. Kidd may be seen going up to Stockton, where he takes a bird's-eye view of the bank situation, and returns bright and early for business on Pine street Monday morning. About once a month, he extends his pilgrimage up to the mines of Nevada County, where he gathers in the bags of amalgam which have accumulated during the month. Capt. Kidd was at one time very largely interested in the counties of Nevada and Placer—owning ditches and mines, number without number. Some years since, he sold all his big ditch interests for a round sum. The Captain still retains his interest in

some of the producing mines, and has made successful stock ventures in other sections. He sinks considerable money in first-class properties like the Pacific Rolling Mills, and owns largely in productive quicksilver properties. When the Bank of California suspended, Kidd was one of its firmest friends, and in the hour of trouble, when friends were friends, he put down his little but substantial fist for a round subscription to the syndicate for its rehabilitation. Capt. Kidd is shrewd and careful in all his operations, and can reckon up his fortune by many hundred thousands—even up to millions. A bolder speculator, with his caution, would have possessed to-day many more shekels. But he has enough for all purposes, and it is very doubtful if he will ever have less. He lives in excellent style, having purchased the elegant mansion on the corner of Sutter and Mason streets, which Henry Barroilhet, the banker, built for himself. He has no sons or daughters to worry him with their extravagant ideas; only one charming, happy niece graces his household, besides Mrs. Kidd, who is hospitable and entertaining. Capt. Kidd is a young man yet, full of fame, full of life, and ready to build a whole line of steamboats, if necessary.

JAMES J. GREEN.

The subject of this sketch, James J. Green, is a man who is well known, not only in the mining circles, but also in the political arena. He is about 45 years old, of a genial temperament, one who seems to never get out of sorts. We can safely say of Jim Green, as he is familiarly called, that he is one of nature's noblemen. Mr. Green was first elected as Controller of this State in 1871. To say his regime was a success is to say too little. Everybody who had business relations with him was always welcome. And in his private life, he was the acme of geniality and pleasantness. After his term had expired, Mr. Green came to San Francisco; he became interested in several mines, one of which, the Trojan, at a meeting of the Board of Directors, he was elected its President. He fulfilled the position with fidelity, attending personally to all the details of the office, and never, during his whole term was he absent from the office during business hours, except when afflicted with that dreadful complaint, which he contracted in Sacramento, rheumatism. To those who know him, it is needless to speak to, and to those who do not know him we can only say that to meet J. J. Green is to meet a gentleman in each and every sense of the word.

THOMAS H. LAWLER.

Judge Lawler is the business manager of the *Daily and Weekly Exchange*—journals deservedly popular in stock and mining circles. He entered upon the arduous duties of his position in June, 1877, and has acquitted himself to the perfect satisfaction of the Exchange Publishing Company. Born and reared in the city of New York, early manhood found him amid the babel of Wall street, charmed by the noise and tumult of stock business, and afloat on the ocean of speculation. There he remained, except during several years of military service, until he was thirty-one years of age; when, in 1868, the golden sands and glorious climate of the Pacific Coast tempted him hitherward. Two years later, in 1870, we find him comfortably settled in the city of Vallejo, holding the position of Police Judge, an office which he filled for four years to the satisfaction of the better class of citizens, but to the terror of the hoodlum element. Judge Lawler has a good education, although limited to the courses of instruction of the common schools of New York; and wields a pen with fair ability. The charm of his society, however, consists particularly in his gentlemanly deportment, his jovial disposition, and his genial good-fellowship.

Judge Lawler has just cause to be proud of his ancestry, his grandsires having fought during the war of 1812, and his great grandsires having fought and bled in the Revolution which made this country a free Republic. The same blood which nerved his noble and honored sires to go forth and battle for right and liberty, in the creation of our country and the protection of its people, invoked their son to fight for the country's preservation. At the first rude blast of war Mr. Lawler entered the army of the Union as a private in the 56th New York Infantry. He retired as a Captain, having earned his commission on many a well-fought field. Peace having spread her wings over our land, the soldiers' occupation was gone, and Captain Lawler accepted a position as Sergeant in the metropolitan police, which office he held until he determined on coming to California. In this position, as in the army, he was respected by all who knew him, as a brave and honorable man and officer.

The remarkable success of the *Exchange* is a tribute to his shrewd and energetic business qualifications. He is one of the first on the street in the morning, and he never misses a point. He is a walking encyclopædia of mines—knows every company, its president, secretary, directors and chief manipulators, together with the extent of its works, the location of its office, and the amount of money in the hands of its treasurer. He knows the date of every annual meeting, and the hour and business of every special one. He scents an assessment levy with an incomprehensible intuition, and goes for the notice and delinquent list with the zeal and persistency of a Spartan veteran. He will smooth the back of a wild-cat with a touch as soft

and gentle as that of a woman; but it must pay its bills to the *Exchange*, no matter what else it may not do, otherwise the Judge shows a pair of claws that would frighten the most vicious wild-cat out of existence. He is possessed of a wonderful vitality, and in his daily round to the fifty principal mining offices, can be likened to nothing short of a human locomotive. Even while taking his noon-day lunch, he will contract with you for an advertisement, and write it up between the claret and the clove.

Judge Lawler is the head of a very pleasant and very happy family, consisting of his wife and six children, four boys and two young ladies, one of whom is married to a very worthy San Francisco lawyer. When the noise and battle of the day is over, the din and commotion of stock-wrangling hushed, and the evening edition of the *Exchange* issued and delivered to the carriers, the Judge quietly locks his desk and slips away, never pausing until he is within the charmed circle of home. Then forgotten arc stocks, forgotten mines, assessments, dividends, meetings, margins—and the evening is taken up with music, readings, reviews of school studies, and pleasant social family conversation.

The world would be better if there were more men in it like Judge Lawler. He is cheerful, and that is a good quality; honest, and that is still better; generous and unselfish, priceless virtues in this uncharitable world; a true friend, and that, too, is a virtue beyond price.

Judge Lawler is forty-one years of age, above medium size, of fine physical proportions, straight as an arrow, and just in the prime of life. He walks with a quick, nervous step, speaks directly to the point, and shakes hands with twenty men in every block. Everybody likes him and he seems to like everybody.

C. P. SYKES.

The subject of this brief sketch was born of English and German parents, in the State of New York, September 16, 1824, and is now in the full prime and vigor of life. At the early age of five years, he lost his father. Two years after the death of his father, his mother married Mr. Asa Haven, a widower with a number of children, and the two families united harmoniously as one. One of Mr. Haven's sons became a member of the distinguished law firm of Fillmore, Hall & Haven, of Buffalo, N. Y., the head of which, Millard Fillmore, became President of the United States.

Young Sykes soon became a great favorite with his step-father, and was selected by him, over any of his own children, to take charge of the home-farm and family. On account of the respect and affection of his parents, and the evidence of great confidence and trust reposed in him, he was induced to forego his most cherished desire to finish his education, in order to fit himself for the ministry in connection with the Universalist denomination. The duties thus imposed upon the subject of our sketch so early in life, prevented the achieving of the benefits of a liberal education, and kept him from affairs of public concern until a comparatively late period of his life. However, by his admirable natural powers, energy, sagacity and indomitable perseverance, he forced his way to the front rank as a successful and popular business man.

In 1858 he established the *La Crosse Democrat*, and was soon in the successful tide of prosperity, winning a firm hold upon the confidence and esteem of his fellow-citizens, with a wide reputation through the Northwestern States as a wide-awake and honorable man of business and great executive ability. Being a bold and adventurous business man, having heard of the discoveries of valuable mines of precious metals in Colorado, in the Spring of 1860 he disposed of his interest in the *Democrat* to Mark M. (Brick) Pomeroy, and started for the wilds of Colorado. There he soon became known as a man of great business capacity and enterprise, securing the confidence of all, and becoming one of the leading miners in that region. He soon accumulated an ample fortune, owning large interests in some of the best gold mining property in Colorado. He was the first to perceive the necessity for placing the mining interests of Colorado before Eastern capitalists, going to New York himself, where he organized a number of first-class mining companies. This was in 1863.

At the close of the war, Western securities and business enterprises became much depressed, and with others, Colonel Sykes suffered heavily, losing most of his hard-earned fortune. This did not discourage him, however, but he immediately turned his attention to other business enterprises, in which he regained a portion of his lost fortune. In 1868 he again became interested with Mr. Pomeroy, becoming publisher and business manager of the *New York Democrat*. He also held several important public and private positions, becoming director in an important steamship company.

On account of his fondness and great predilection for mining enterprises, he could not rest quietly in New York, but determined once again to try his fortunes west of the Rocky Mountains. He came to California in 1875, where, learning of the rich, and comparatively unexplored regions of the great Territory of Arizona, he was very soon found there, looking up for himself such properties and locations as offered, in his good judgment, wide fields for his sagacity and enterprise. Soon he decided that the beautiful valley of the Santa Cruz presented to the settler and bold pioneer, the most attractive spot in the entire Territory, for purposes of agriculture, and he at once became possessor of the celebrated Calabasas, and other grants, including therein over 30,000 acres, one-half of which is arable, and without fertilizers will

produce abundant crops of grain, and all kinds of fruits and vegetables. He also secured titles to the several mines of the San Xavier Lode, and commenced at once their development. Drawing to his assistance capital, he has organized the San Xavier Mining and Smelting Company, and commenced work on their mines less than six months ago, with most encouraging results, having already on their dumps, ore of the value of at least \$20,000, at an expense for mining of not more than \$4,000, and the San Xavier Company will, at an early day, erect smelting and cupelling works, for the extraction of the precious metals. This mine, so far as developed, promises to be one of the richest and most important in the Territory.

The value of the lauds and mines acquired by Col. Sykes, soon attracted the notice of some of our most prominent and enterprising capitalists—such men as Judge John Currey, Hon. Jno. P. Jones, Eugene L. Sullivan, and Geo. C. Perkins, of the well-known shipping firm of Goodall, Perkins & Co., and they have together organized and incorporated the Calabasas Land and Mining Company, to develop the wealth of their mines and lauds, and to build up the town of Calabasas, which is situated in the midst of the best mining claims yet discovered in Southern Arizona, and destined to be the leading point for the trade of that part of the State, as well as Sonora, Mexico. Col. Sykes has been chosen as the manager of the enterprise, and is now most actively engaged in the prosecution of this grand scheme. With such backing, by his indomitable and untiring perseverance, energy, and superior qualifications as a manager, we predict for him the greatest success and realization of his most sanguine expectations; and the Territory of Arizona is most fortunate in having such a man interested in its development and future prosperity.

He has excellent perceptive faculties, and is ever on the *qui vive*, and nothing takes place of an unusual character within the range of his vision without his notice. Being decidedly original, he has his own way of performing whatever he undertakes, avoiding anything like routine, has his own views of things. His religion consists in strict integrity, in doing what he thinks right between man and man, and between God and himself. Being rather indifferent to the good opinion of others, he is brave enough to maintain his convictions, irrespective of what others may say or think. He is slow in deciding questions, taking an abundance of time to fully inform himself with reference to any new scheme or subject, but having a strong will, when once decided, he is steadfast. From early life he has made his way in the world on his own account, thereby strengthening his apprehensions of the useful and practical. He is especially adapted to the line of life which requires those elements of character which are found in the manager, the superintendent or the director. Socially he has genial and pleasant qualities, and is extremely popular with all who know him. Though quiet, almost to graveness, yet the sparkle of his eye when a little excited shows his keen appreciation of wit and humor, and that his mood, though thoughtful, is not morose. The vicissitudes of his early life and his familiarity with the many phases of suffering among the working classes, have opened his nature to broad and earnest sympathy, knowing how to give help at the right time, imparting through the magnetic influence of his words encouragement and strength to the distressed and discouraged. Mr. Sykes is now living with his second wife, an accomplished lady, by whom he has two promising children, and their home is the center of a delightful and happy circle.

THE "DAILY EXCHANGE."

The great importance of a mining journal on the Pacific Slope, is best shown by the influence, prosperity and popularity of the *Daily Exchange*. Three things are essential to the permanent success of any newspaper: ability, integrity, industry. All these in the most eminent degree are displayed in the management of the *Exchange*. To that journal belongs, exclusively, the credit of having been the first to fully explore the field which it now occupies. Prior to the establishment of the *Exchange*, a daily newspaper, perfect in all its departments, but paying paramount attention to the great mining interests of the Pacific Coast, was not even thought of as amongst the possibilities. Of mere advertising sheets, professing to furnish the records of the Stock Boards, and but half fulfilling that promise, there was an abundance. Some of that nondescript class of publications have survived and somewhat improved. The majority, however, have found the grateful obscurity to which their lack of merit entitled them, by passing to the limbo of unsuccessful papers. Even the *Exchange*, at the beginning of its fortunate career, was far from being the able exponent of great interests which it has since become. Those who launched it on the sea of speculation and shaped its course, had not the advantage of imitation. Experience has, however, taught many valuable lessons and furnished suggestions by which those responsible for the conduct of the paper have been quick to profit. Of the *Daily Exchange*, as now published, it would be but poor praise to say that it is not inferior to any paper of its class published in the world. An honest criticism would award it a place far in advance of its competitors, and too firmly fixed in the public estimation to suffer by rivalry.

Few people are aware of the great expense incurred by the maintenance of such a journal. Its publication necessitates the employment of a force of compositors, pressmen and carriers that would suffice for a newspaper much larger, but engaged merely in the discussion of the ordinary events of the hour. The existence of a financial journal, like the *Exchange*, is devoted to recording extraordinary events, by which millions change hands in hours, and colossal

fortunes are gathered up or swept away by the great tides of prosperity and adversity that float the stock market. To a mere newspaper, minutes are of slight importance. To a mining journal moments are golden. It is imperatively necessary that the paper shall be thrown on the street almost as soon as the great doors of the Stock Exchanges swing back to afford egress to the crowd of brokers and operators who have temporarily set a valuation on the mineral wealth of the coast. While the bulls and bears wage their fierce war on the floor of the Board room a deft telegraph operator sits attentive to the proceedings of the competent clerks evolving order from apparent chaos. Fast as the figures accumulate on the official list, they are flashed over the wires to the office of the *Daily Exchange*, and with equal expedition reproduced in the "forms" of that journal as the last record of sales is being translated in type, and while the telegraph still ticks the announcement of the Board's adjournment, the forms are transferred to an elevator, lowered to the ground floor, and placed on the great double cylinder press waiting to receive them. A turn of the crank, a strain of the ponderous machinery, and the next moment damp copies of the *Exchange* are in the hands of the crowd of eager newsboys and agile carriers. Long before the last of the large edition can be worked off, even by the powerful press with its great capacity, thousands of people have learned from the advance numbers the coveted information which could be obtained in no other way so pleasantly, correctly and expeditiously. The second edition of the *Exchange*, for it is necessary daily to issue two, is produced in the same manner as the first, and is the only journal devoted to mining interests that can afford such a second edition. The same scenes of activity are enacted, the same watchful care exercised until the carriers and newsboys have again been entrusted with the distribution.

Though the chief value of the *Exchange* lies in the fact that it publishes as complete a record of the stock sales as the official list contains, it does not rely altogether upon that distinction for its great popularity. Its strength as a complete newspaper rests in the ability of its editorial columns, the fulness of the reports from the mining districts, and the number of official letters which it supplies to its readers. In addition, it gives an interesting summary of local and foreign events of interest, which is read with satisfaction by the numbers who have neither the time nor the inclination to wade through the dreary columns of trash, sarcastically called "news" by the large dailies. The reports of the stock market and the comments on men and things therein contained, evince a knowledge of the true inwardness of affairs, and an ability to express that knowledge, of which no other paper in this our Western world can boast. The author of articles of this class should be neither a mad enthusiast nor a superficial observer. He should be thoughtful, discreet, well versed in the science of stock operating, careful in analyzing reports, keen in the detection of news; above and before all things, honest. That such is the author of the stock reports in the *Daily Exchange*, every line of these reports bears incontrovertible evidence. The same completeness and intelligence is displayed in all the departments of this most excellent paper. Sparkling with wit; bold in denunciation where censure is required; generous in laudation where praise is deserved, its editorials are models of vigor, purity, and elegance of diction, and are widely quoted by the Press of the State.

The increase in the business of the paper during the past year has necessitated the purchase of a second large press costing \$22,500, which the receipts of the paper have long since paid off, besides leaving a handsome series of dividends for the proprietors. An entire building is occupied by the composition, editorial and press rooms. The publication office is separate from the editorial rooms, being on Montgomery street, within convenient distance of the Stock Boards. The material, furniture, presses and other property required in the continuance of the business, is valued at \$120,000, a low estimate. Mr. D. F. Verdenal and Col. J. P. Jackson are the proprietors, gentlemen whose social and business standing is sufficient guarantee of the integrity of any enterprise in which they may engage. Col. Jackson's connection with the *Post* and the number of his business engagements prevent him from devoting much active attention to the *Exchange*. The responsibilities of managing director fall on Mr. Verdenal, who discharges them with a zeal and fidelity to the public which the thousands of readers of the *Exchange* can justly appreciate. Besides being a thorough business man, Mr. Verdenal is a brilliant writer and from his pen, ever ready and always industrious, fall the many gems of thought, and are winged the many flights of fancy which have given his journal its distinctive character. The business might be profitably increased by adding thereto the trade of preparing circulars, letter-heads, etc. Experience has, however, shown that first class journals are never issued from an office which devotes its surplus energy to the business of job printing. "Excelsior" is the motto of the Exchange Publishing Company, and the *Daily Exchange* newspaper is the banner whereon the world may need that evidence of high hopes and honorable aspirations.

The best features of the daily paper, and others that may not be introduced in a journal of ordinary size, are embodied in the *Weekly Exchange*, a magnificent eight-page paper, which circulates extensively in the Eastern States and Europe. Replete with the latest mining news, carefully edited, and enlivened by original articles on the questions of the hour, it is a welcome visitor to the mining camp and home circle. Although both the *Daily* and *Weekly Exchange* are now models of journalistic taste and ability, and business enterprise, it is the intention of the management to still further improve both journals, and enlarge their sphere of usefulness.

GEORGE SCHULTZ.

"And here comes General Schultz—the 'Old Man Schultz,' as they call him, the man who now controls Exchequer and Bullion—used to control Justice," remarked an operator to a friend who was around seeing the sights. In many respects George Schultz is a remarkable man. He is full of grit; as tenacious as a bull-dog; as confident of success as the most ambitious soldier. Although generally called old, Mr. Schultz is quite a young man—only forty-three, as the town records of Hanover would show, if examined. He has been a resident of this State since 1855, engaged in the wholesale liquor business, of the firm of Schultz & Van Bargaen, who are well known all over the Pacific Coast. But while engaged in this business, Schultz turned his attention to mining, and was among the first to express his great confidence in the future of the Comstock. He is prominently identified with the management of several properties on the great lode. At one time he controlled the destinies of Ophir, and subsequently Justice fell into his hands. The control of the latter was wrested from him by a so-called reform combination, which was to astonish the stockholders by what they would do. Schultz concluded to let them try it on, and the stockholders have been very much surprised at the number of assessments levied under the reformers' management. But Mr. Schultz has retained and still manages Bullion and Exchequer. The Bullion mine has been worked by the Schultz management ever since the Comstock was opened. In the face of apparently insurmountable obstacles; when the Comstock was deemed played out; long before and after Fair and Flood and O'Brien waxed rich on the profits of their bonanza, Schultz kept sinking that Bullion shaft. People laughed at him and thought him crazy; but he kept on, determined to find a bonanza, if he sunk away down to the nether regions for it. At present writing, Bullion seems to have struck the forerunners of an important ore body. It is to be hoped that Mr. Schultz's hopes will not be again disappointed. He deserves success in Bullion; he has worked it faithfully and economically for the best interests of the stockholders. Comparatively few assessments have been levied. Several times Mr. Schultz has stood upon the verge of ruin. Carrying large blocks of stocks, a sudden panic found him unprepared for the emergency. But he stood the pressure, and with the kind assistance of sympathetic friends, weathered the storm.

Mr. Schultz would attract attention anyway. Tall and erect, his Teutonic features are decided, although from the cut of his underchin whiskers, he has often been called the Horace Greeley of the market. He occupies a splendid mansion on Sutter Street, lives like a prince, and has a wife and family to enjoy life with him.

WILLIAM P. DEWEY.

The discovery of the Washoe silver mines, in 1859, greatly enlarged the field of mining enterprise on this coast, and created a demand for more cheap and efficient methods for the treatment of this class of ores than those previously in use. When the owners of the Ophir mine brought down their first lot of ore and found, after paying at the rate of \$400 per ton to have it worked, that a large percentage of the metal had been lost in process of reduction, great was their dismay and earnest their desire to find some more cheap and effectual plan for its treatment. In this emergency various parties were induced to commence a series of experiments looking to the discovery of some more economical style of treating these valuable ores. Among others who engaged themselves in this manner, were Mr. William P. Dewey and his associates, Messrs. Smith and Cunningham, who, after a long course of trial, conducted at the foundry of Goss & Lambard, in Sacramento, devised and introduced what is now known as the "Washoe Pan Method of Amalgamation," which, because of its admitted superiority to all others, has come into general use, not only here, but in Australia, and to some extent also in Mexico, South America, and in the leading mining countries of Europe. The first works constructed by these gentlemen were put up at South Beach, in this city, where for some time they treated the Ophir ores under contract with that company, never returning less than 90 per cent. of fire assays, a much closer working than is generally reached at the present day. When the Ophir Company put up their large reduction works in Washoe Valley, they purchased of Mr. Dewey and his partners not only the right to use their process, but also their pans and other apparatus, all of which was removed to the new establishment of the company and set up there, Mr. Dewey going over to Washoe, and for two years supervising there the metallurgical branch of the business, receiving as compensation for his services 2½ per cent. of the gross bullion production made. To Mr. Frank G. Cunningham, Mr. Dewey's partner, is due the credit of introducing false bottoms to amalgamating pans, and employing steam instead of fire for warming the latter, an improvement that, like the pans and chemicals, has also come into extensive use. These were the halcyon days of Ophir, when she paid dividends monthly at the rate of about \$60 per foot.

As the inventor in part of the Washoe pan-process, Mr. Dewey has connected his name in a creditable manner with the metallurgy of gold and silver on this coast, and we cannot just now call to mind a better type of the active, educated California miner than we find in this young man. Having supplemented a good medical education with a thorough chemical training, he was tolerably well fitted to follow the bent of his early inclinations, which lead him into the

field of metallurgical experiment and practical mining, in both of which he may be considered an adept. As an amalgamator and millman, he has not many superiors on the coast, his opinions having great weight, also as a mining expert. He is not merely an office man, but an out-door worker, spending much of his time in the California gold fields or in the silver mines of the more remote interior. He has large mining interests, and looks after them personally, a duty that occupies a good deal of his time. He prefers legitimate enterprises to speculative operations, and is not afraid to put his money into anything that has a square, practical look about it. While his mining investments have generally been fortunate, he has sometimes, through the guiles of "ye honest miner," found his profits on the wrong side of the ledger. In business circles Mr. Devvey, to adopt the phraseology of the underwriter, ranks "A No. 1," and what is equally to his credit, he is widely known as a person of kindly impulses—is as much a favorite with the lowly poor as with the scheming millionaire. He is benevolent in a broad and good sense. His frank and unaffected manners confirm the favorable impressions made by a goodly person, and even a stranger would be inclined to trust him with grave responsibilities. We have places and a need for more such men in this community.

CAPTAIN E. R. WARSAW.

Capt. E. R. Warsaw was born at Montgomery, Alabama. His life has been usually eventful. He began at the first round of the ladder, so to speak, and he has risen to the very top. We have had occasion to speak of very few men who can show such a brilliant and enduring record as his. At the age of fourteen, Captain Warsaw shipped on a vessel engaged in the China trade, and until 1845, he followed the sea in ocean vessels. At the outset of the Mexican war, Captain Warsaw, in common with other adventurous spirits, joined the Texas Rangers, a battalion that rendered signal service, under the command of Captain Walker. Captain Warsaw followed the fortunes of General Scott, from Vera Cruz to the city of Mexico, and was an active participant in the most notable fights. He retired from the service with honor, at the close of the war. In September, 1849, the Captain arrived in California, in quest of a fortune. The first four years, from '49 to '53, he devoted to mining in the mountains. This portion of his career was not specially eventful, neither was it satisfactory. He failed to strike a paying placer. Next he turned his attention to stock-raising. In this business he made and lost a fortune. In this respect his experience was like that of many others. In 1856, Captain Warsaw resumed the calling of a seaman. His first command was a ship running from New York to Valparaiso, and the Indies. He continued in command of sailing vessels until 1867, when he accepted the position of captain in the Pacific Mail Steamship Company's service. He commanded in the course of his term nearly all the celebrated steamers of the China line, terminating his connection with the company in 1874, soon after the burning of the "Japan." Since retiring from the sea, Captain Warsaw has been actively engaged in mining enterprises. His integrity and tenacity of purpose have given him an excellent reputation in mining circles, and, as is usual with the men of his stamp, he has raised himself to a prominent position. Captain Warsaw is now in the very prime of life, and in view of the fact that he is the leading owner in the Vermont Consolidated Mine, and other valuable properties, his prospects for a comfortable career ashore are of the most promising character. The Captain is a resident of San Francisco.

JOHN T. BRADLEY.

John T. Bradley was born near Mount Sterling, Kentucky. Like most men who have made deep ruts along the pathways of life, he pushed out from the parental fireside early in life. Before the dawn of adolescence had even gathered upon lip or chin, at the age of twelve, he turned his face westward along the path of empire, and with but five dollars in his pocket, and a bundle, he started in 1849 across the plains for California. He first pitched his tent in Grass Valley, and became a miner. Industry, temperance and economy brought to him a large measure of success. When Comstock and others sent abroad the facts of their wonderful discoveries at Virginia City, young Bradley again folded his tent and crossed the Sierras. Here, in this new field of broad ledges and bonanzas, he soon became one of the magnates of success. From that hour to this, his fortunes have fluctuated between two extremes—the zenith and the nadir of material prosperity. Not, however, until the Comstock was transferred to California Street, and represented there by numerals and letters upon incorporated paper, did his pocket begin to collapse and inflate. Up to this period, a steady inflow of success came to his coffers as the result of well-applied industry and economy. Keen and incisive as is his brain in analyzing the motives and plans of others, still he has stumbled and sometimes fallen over the hidden wires which unscrupulous manipulators have so often stretched across and along the avenues of speculation. Elastic and recuperative, however, he has as often recovered the perpendicular, and faced again the everlasting "tiger." Open, generous, loyal to those toward whom he turns in friendship, his hand and arm have ever been at the disposal of the unfortunate. Probably no man around the Exchanges has so often imposed obligations upon others without solicitation, as has our subject.

With the Ten Commandments and the Beatitudes written upon his heart by a good mother, he has made a way upward from the very moment he left her side, with five dollars, for a long journey across the plains.

John T. Bradley is as little indebted to the outside world for what he is as any man living. Instinctively self-reliant, and inspired with a lofty purpose and hope, he has always rested upon himself, and in the Providence which his mother taught him was the environment and constant help of the trustful. Still young, he steps with a firm foot, and hopes and plans with a vigorous heart and brain. For the good of the true and unfortunate, it will be a kind Providence that will lengthen out the years of John T. Bradley with redundant funds and a healthy nerve far into the realm of the serene and yellow leaf. But let what will come, many an ever-green and flower will fall where shall rest the ashes of the young pilgrim of Mount Sterling.

HON. ROMUALDO PACHECO.

The subject of this sketch may well be styled "California's favorite son." He was born in Santa Barbara, in the year 1831, and is consequently forty-seven years old. There is much of romance in his career, and he is an illustration of the theory that—no matter what the surroundings—"blood will tell"; or, in other words, a man of intellect and culture will inevitably reach his appropriate sphere, and exert his legitimate influence in society. Want of space prevents an allusion to many interesting details, but we give the salient points in the career of an honored citizen. He was educated by private tuition, and at a suitable age was trained for nautical pursuits. He was at sea from the age of ten until he was about seventeen. He then returned to his home in Southern California, and engaged in farming and stock-raising, which pursuit he followed for about five years. At early manhood, he took great interest in politics, and speedily acquired a prominence among the citizens of the southern portion of the State, both native and American. He has always been an ardent Republican, and in his political career, as well as in his social relations, his honorable dealing and fidelity to trusts imposed have won for him the confidence and esteem of all classes of our citizens. In 1853, he was elected to the Assembly, where he served one term; and in 1856, he was elected to the Senate, which position he filled for three consecutive terms. His career in these positions was characterized with such marked fidelity to his constituents and usefulness to the State, that, at the expiration of his last term, he was nominated and elected, in 1863, to the office of State Treasurer. In 1873, he received the nomination for Lieutenant-Governor by the Republicans, with Newton Booth at the head of the ticket, and shared in the victory of that campaign. In 1876, when Governor Booth was elected to the United States Senate, Mr. Pacheco succeeded to the gubernatorial chair, which position he retained until the close of the term. In the campaign following, he received the Republican nomination as a candidate for Representative to Congress from the Fourth Congressional District, and it was claimed that he received a majority of votes. The vote was close, and Hon. P. D. Wigginton, the Democratic candidate, contested the election before the House, and was declared entitled to the seat. After this decision, Mr. Pacheco returned to the State, and became associated with W. E. Hale, Esq., a well-known member of the San Francisco Stock Exchange, and entered into the business of stock brokerage, which, judging from a most propitious beginning, augurs a future prosperity. Mr. Pacheco brings to his new vocation a peculiarly varied and valuable experience, which of itself furnishes a desirable fund of capital for a vocation wherein a knowledge of human nature is a highly essential acquisition. He also takes with him to the membership of the fraternity such elements of excellence of character and agreeableness of manners that will render him ever welcome at the sittings of the Board, and insure an extended popularity to the firm of which he is a member. His fellow-citizens have ever been ready to honor him by the imposition of high trusts, and we hope that their benefactions in the future will prove more numerous, and abundantly substantial.

JOHN SEDGWICK.

John Sedgwick, one of the leading members of the Pacific Stock Exchange, first looked up from the cradle some fifty years ago, in the little rural town of Sharon, Litchfield County, Conn. His father, Charles F. Sedgwick, Attorney-General for thirty years, and his uncles—Albert Sedgwick, "High Sheriff" of Litchfield County for twenty-six years, and John Sedgwick, Brigadier-General of the United States Army, who fell on the field of battle at the Wilderness—together with other distinguished official and literary family connections, such as Miss Sedgwick, the poet, and Theo. Sedgwick, the writer upon jurisprudence, give him the birth-privilege of a kind of official and intellectual aristocracy. His boyhood was peculiarly blessed in its social relations, mainly developing within such personal atmospheres as that of the Beechers, who then were there beginning to rise into public importance; of the Ellsworths and the Smiths, from whom the State has called some of its best Governors; as well as in the reflex of the light of the then great Law School of Litchfield Hill, illuminated by such minds as John C. Calhoun, Truman Smith, Theo. Sedgwick, and others who in after life won public

distinction. Reared under a system of morality typified, in its severity, in the rugged superficialities of his native mountains, the lines of his childhood were laid in justice and in honor; giving to his manhood, despite the attritions of more than twenty years of lax pioneer and mining life, a sense of the equitable and chivalric which crown him a worthy descendant of the historic Sedgwicks of New England. The subject of our sketch was himself at one time Sheriff of Tuolumne County, making a somewhat graphic history through official connection with the great "Tuolumne Ditch War," in which Erwin Davis figured so conspicuously in 1856. Next we find him serving with ability as Chief Clerk of the House of Representatives, at Sacramento, in 1861-2; then as United States Collector of Internal Revenue of the Third District, and afterwards of the First District, with San Francisco as headquarters — an official career which seems to have well sustained the public character of his lineal line, which we find running back with distinction into the old Colonial periods. No longer in the public service, Mr. Sedgwick is at present engaged as commission broker of mining stocks, a sphere in which he seems to revolve with as much aptitude and success as in any former orbit of business.

Just abreast of the fiftieth mile-stone, the dust of the journey is beginning to gather in white and thickening flecks upon beard and lock. Standing six feet three, at right angles with the pavc, and erect as Cleopatra's Needle, he moves a prominent figure among the crowd; carrying the evidence in physical proportions, expression of eye, and general bearing, that, like most of his ancestors, he was made, at least in great emergencies, to lead and direct the masses. Although he imbibed with his mother's milk the spiritual essence of Calvinism, none but a crucial analysis would now betray the evidences of its early impregnations. And yet, like the good Catholic, the rites of his primal faith will, without doubt, be accepted in his last moments as his only spiritual consolation. The creed and liturgy of his mother were inwrought by her as if with her fingers into the structure of his soul, as the weaver weaves the vine and the flower into the delicate fabric; casting it there in lines that no chafing of the rough forces of life will be likely to ever entirely unravel and obliterate.

John Sedgwick is no fractured brick in the personal pyramid of the Pacific Stock Exchange, but is rather a member that gives symmetry, stability, and character to the fabric. The world, surely, is no poorer for his birth, but had in truth its wealth increased in the very hour of his mother's parturition, when the Angel of Life passed him across the threshold into the realm of the conscious.

"ARCHIE" BORLAND.

The subject of this sketch was projected upon the world forty-six years ago. His cradle, under the shadow of the Cross of St. George, was rocked by a Protestant mother to the rhythm of "God save the King," in the little town of Colerain, Antrim County, of the Isle of Emerald and of the Harp. At seventeen, restless and ambitious, with brawn palpitating with stroug pulsers, and with an inspiring faith in a beneficent Providence, as his entire capital, he crossed the Atlantic to seek in the New World the life-ideal which, in the glowing visions of youth, floated, a gorgeous apparition, down the vista of the future. In 1832, he came to California, located in Grass Valley, and there devoted himself to mining. Here he laid the foundation of future success; acquiring that experience which subsequently was to prove the key with which he was finally to unlock the doors that opened upon the object of his ambition. From the deep shafts and drifts of the mines of Grass Valley, he has marched to the front rank in the realm of industry, enterprise, and pecuniary success. In 1862, he crossed the Sierras, and began a new chapter of life at Virginia City. From that time, this point has been his chief center of operation; although, like most miners, he has occasionally visited, during this period, other localities, either as a prospector or as superintendent of some mining enterprise. The great Comstock Lode, however, has been his grand base of action. Here he has built his reputation and won his greatest successes.

"Archie" Borland is no common man. Although he carries in his pocket no parchment from the hands of an Oxford Professor, still, he carries the mental evidences of a favorable recognition from a far abler Teacher. With a heavy and active brain, set upon a strong neck, rising like a veined monolith of throbbing granite from out of a broad and solid base, he appears, as he is, a marked embodiment of physical and mental energy. Brave, generous, and genial, a host gather at his side and move on lines of his suggesting. Loyalty to friends and to principle is a distinguishing element in his composition, and constitutes him a stroug living magnet. He is a miner by intuition; comprehending the sum of mineral indications with a rapidity and correctness of conclusion which has sometimes cast the profoundest deductions of the theoretic scientist into comparative insignificance. By intuition, his eye penetrates the geological strata, analyzes its deposits, and often measures their worth in advance of pick or drill. By the power of this perception, he moves a master among mine and stock magnates upon Pine and California streets. No "pent-up Utica" controls his plans. His brain was cast in too large a mold for small enterprises. He must stand a captain among captains, or else, like Ulysses, he withdraws from the field. A fortune at a single stroke now, only reaches the measure of his ambition in the field of speculation. Opportunity,

time, and health are the only requisites now, for him to finally reach the plane of the substantial millionaire, and even to purchase, should he desire, on return to the fatherland, a seat beside Plimsol, in the English Parliament. In matters of religious faith, our subject is a profound believer in the personality and omnipotence of God. "Whatever the Infinite does," says he, "is done well and sublimely." His providences he sees interweaving through all the vast plexus of life, reaching even to the fall of a sparrow, as well as to the fall of a hair from the humblest head.

The blood of the Scotch-Irish has flowered, in "Archie" Borland, into a hardy and fragrant blossom, giving additional evidence of its moral strength, persistency of purpose, and sublime trust. A nation of such men would, in any age, uphold the vitality, enterprise and conscience of the race, with a capacity and force that would bring success out of even the hands of a resisting fate. The more of such human forces, the better for the world's advancement of manhood and material wealth. The American Republic needs such accessions to its grand army of unostentatious social builders, to check the growth and expanding influence of a generation of republican aristocrats, in whose political conceptions the Empire, with its titles, its class privileges, its indolence, and its crimes, as the superstructure, and a servile peasantry as its mud-sills, rises above the Republic. Such men are the land-marks, the light-houses and the signal-towers of the industrial, speculative, and moral realm. Let more like "Archie" Borland be sent us from the infinite womb of the "coming," and the conquests over nature, and the strides of the human upward will be more rapid, complete and grand.

ROBERT D. BOGART.

Robert D. Bogart, journalist, was born, reared and educated at Princeton, New Jersey. At sixteen years of age he entered the navy, and in his nineteenth year he was assigned to duty on the staff of brave old Admiral Farragut. He was with the Admiral in all his famous engagements, beginning at New Orleans, in 1862, and ending at Mobile, in 1864. At New Orleans, and in passing the rebel batteries at Vicksburg, Mr. Bogart was mentioned in the official dispatches for gallant and meritorious conduct; and at Mobile he gained a special letter of praise from Admiral Farragut to the Navy Department. He entered journalism in 1870, and for two and one-half years was on the staff of the *New York Sun*. He severed his connection with the *Sun* to accept a San Francisco engagement. He has been attached to the Pacific Coast press some six years, and the press is now attached to him. He takes rank as one of the leading newspaper writers west of the Rocky Mountains. He is keen, witty and refined; but, like most men who wield a virile pen, he is nothing if not caustic. But his ability commands respect and admiration, and in newspaper circles there is no man who is more deservedly popular. He would not miss a legitimate opportunity to smash the editorial idol of a brother quill, and once begun he would make the work of demolition complete. But no man in the profession has more *esprit du corps* than Mr. Bogart, and no man of our acquaintance responds more quickly to appeals from less fortunate writers for the press. Mr. Bogart is so well known in the profession that it seems a work of supererogation to allude to his capacity for brilliant and enduring work; but, for the benefit of the outside world, we may state that his versatility and industry are phenomenal. Mr. Bogart is at present the leading writer on the *San Francisco Daily Stock Report*, telegraphic stock correspondent for the *Virginia Chronicle*, and mining correspondent of the *Boston Commercial Bulletin*.

JOHN LANDERS.

One of the most popular and genial young men in Nevada Block, and one of the permanent fixtures of that institution, apparently, is Mr. John Landers, or, as he is more generally known about town, "Johnny Landers." Mr. Landers is senior member of the firm of Landers & Co., General Agents on this coast of the Manhattan Life Insurance Company of New York, one of the oldest and soundest of the great Eastern companies. He is one of the brightest and most wide-awake business men on the Pacific Coast, and though he has met with many misfortunes, has before now been up to his eyes in stocks that have not treated him kindly in the end, he has stuck manfully to his business, and the old Manhattan would no more attempt to get along on this coast without Mr. Landers, than it would without the Board of Directors itself. Mr. Landers was bred to the insurance business, having been trained in it from his fifteenth year. He was born in 1841, in New York City. In his fifteenth year he was placed in the office of Lorenzo M. Arnold, one of the pioneers of the life insurance business in New York, and for six years remained with that gentleman, receiving a thorough training, and being fitted for any position connected with insurance. But young Landers couldn't bear the thought of remaining in a subordinate capacity, and in 1862 we find him striking out for the Pacific Coast, with a "Godspeed" from his old employer, and with high hopes of his own success. For two years after his arrival in San Francisco he devoted his attention to mining, on a limited scale, but his chief employment was in the business to which he had been trained—insurance.

In 1864, the Washoe excitement, just then getting at its height, lured him to Virginia City. He

went there on horseback by way of Downieville, and he tells with great pride now of the horrors he suffered on that desolate ride. He got there just when Gould & Curry, Savage, Norcross and Chollar were beginning to roll out their big dividends, and having taken with him his savings, he invested them with such good judgment that before two months had elapsed he cleaned up with over \$100,000. He was thinking then of returning to New York, but he received an invitation about that time to act as the general agent of the Manhattan, for the Pacific Coast, and the offer was so flattering that he promptly accepted it. He was then but 23 years of age, and already found himself rich, and in possession of a fine business. But good fortune did not stick by him always. He lost the greater part of his gains in subsequent speculations, and from that day to this has never permanently recovered them. He has been a bold operator, and sometimes a most successful one, but oftener has lost all in a week that he had accumulated by months of constant successes. He made a vast sum of money in the bonanza excitement of 1874-75, but the larger part of it slipped away from him. He was one of the organizers of the Andes Mining Company, and is to-day its chief manager, but the mine has not yet turned out profitable.

In person, Mr. Landers is dapper, with a jaunty business air that speaks volumes for his energy. He is as popular in insurance circles as he is among his mining acquaintances, and though sometimes greatly absorbed in his speculations, he keeps his insurance affairs at his fingers' ends, and gives them his personal attention every hour in the day. He rarely talks stocks to his insurance acquaintances, and never yet has been known to talk insurance to his stock acquaintances. This latter trait is so remarkable among insurance men, that it is worthy of special and grateful comment. Mr. Landers is a member of the Bohemian Club, and one of the financial pillars of the institution.

RICHARD WHEELER.

The subject of this sketch was born in Buffalo, N. Y., July 12th, 1844; arrived on this coast September, 1857. During the Salmon River excitement, in 1862, Mr. Wheeler was one of the first to go, and, like the majority of the pioneers of Idaho—which was then an almost unknown wilderness, and a part of Washington Territory—packed his blankets upon his back for hundreds of miles, and endured all the hardships of the trip, with the endurance of an old veteran in the business, although then only eighteen years of age. He mined for a while at Oro Fino, and then went to Lewiston. Shortly after his arrival, Mr. A. S. Gould, now Superintendent of the North Carson mine, brought up from Portland, Oregon, the material for a printing office, and started the *Golden Age*, a weekly newspaper. Mr. Wheeler, feeling the effects of the want of a trade, enlisted as "devil," and apprenticed himself to the "art preservative of all arts." He is the first individual that graduated at any trade in Idaho—finishing his time under Frank Kenyon, subsequently proprietor of the *Lyon County Times*, and founder of the *Bodie Standard*.

In 1864-5, Mr. Wheeler was interested in the *Portland Evening Bulletin* with an association of printers. The enterprise proving a failure, Mr. Wheeler came back to California in May, 1865, and took charge of his brother's hotel, at Folsom, and which was then doing a large business for so young a man to handle. He then showed his business qualities so well, that one of his brothers, who was located at Austin, Nevada, sent for him to take charge of one of his branches of business. Here the climate did not agree with him, and he left Austin for Virginia City, where he tarried for a while, "subbing" on the *Enterprise*. A call came to him from Genoa to take charge of the paper published there; and, although the office was in rather a bad plight, both financially and mechanically, he brought order out of chaos, and had succeeded in saving sufficient money to pay off the mortgage upon the institution, but which money, unfortunately, was in the hands of an agent in San Francisco, who just at that particular juncture failed. Mr. Wheeler, unwilling to pass through months more of such labor as he had passed through, stopped the *Douglas County Banner*, and accepted an invitation from Mr. Crawford, of Carson City, the mortgagor, to enter into partnership with him the following Spring (of 1866) in starting a paper at Meadow Lake City, a place then assuming considerable importance from discoveries of silver and gold mines. The mines proving a failure in that district, the project was abandoned.

On the 22d of July, 1867, Mr. Wheeler, in conjunction with M. D. Carr, started the *Stock Report*. At that time the San Francisco Board of Brokers had but recently moved to a room, especially fitted for them in the New Merchants' Exchange, California street. A room was given the young firm, by Mr. Sneath, then President of the Merchants' Exchange, and permission to put in a printing office. An old Degener half-medium press, a small marble stone, and two or three small fonts of type, constituted the outfit. The size of the first issue was 18x12, printed upon one side, on heavy book-paper. At the first, Mr. Wheeler occupied the quadruple position of carrier, solicitor, compositor, and editor, and for several years it used to be remarked by people observant of his movements, that he did the work of four, and did it well, as the establishing of the *Stock Report* shows, as up to the time of his retirement from it, April, 1875, not one single dollar capital had been invested in it; all the material, etc., was purchased from its profits, including considerable sums of money drawn out by both Mr. Wheeler and Mr. Lawton.

In 1869, Mr. Wheeler compiled the statistics, showing the dividends and assessments of the Nevada mines. Prior to the compilation of the work, the opinion was universal, that the assessments had exceeded the dividends, but instead, this work showed the reverse was the case, and that the excess of dividends over assessments was equal to the total of the latter. The work was largely quoted from by all the leading papers, in England, France, Germany, as well as the United States. The San Francisco Stock and Exchange Board, in recognition of the work, passed a vote of thanks to Mr. Wheeler, for his compilation singly of such valuable interesting statistics.

In 1872, the business of the *Stock Report* was enlarged, and book-binding and lithographing added to the news and job printing departments.

In 1874, the *Stock Report* was enlarged to a four-page daily, and a bid made for the advertising of mining assessments, and so successful was the new project, although started with doubts of its success, both from his partner, employes and friends; but evidently Wheeler does not know what "fail" means, as in less than three months the paper had been enlarged twice, to accommodate the advertising patronage flowing in, and placed upon a sound basis. So successful was the new enterprise, that efforts were made to cripple it by having laws passed by the Legislature to compel the advertising of mining assessments in papers of a general character instead of special. A bill of this character was passed, but vetoed by Governor Booth, and although by some hook or crook an amendment to the code crept in of about the same character as the special law. Mr. Wheeler then went to work to defeat these movements, and enlisted a staff of well known and talented journalists in this city.

At the time of the great fire in Virginia City, in October, 1875, Mr. Wheeler was appointed Secretary of the Relief Committee, enlisting funds for the relief of the sufferers by that disastrous fire. Here, again, his indomitable energy came into action, and through his efforts principally were the afflicted ones of that city relieved, he attending personally to the shipping of the goods from this city, brooking no delay by the railroad, and seeing personally each morning that the relief car was attached to the express train. Mr. Wheeler's duties were so arduous that, at the completion of the work, he retired on the sick list for a time.

In April, 1875, Mr. Wheeler disposed of his interest in the *Stock Report* and accepted the situation as manager of the mining department of the *Alta*, which position he now holds, and in which he has won the confidence and esteem of his employers. But it is hardly probable that his active nature will allow him to remain long out of some enterprise.

ADOLPH SUTRO.

In another part of the present work, great space is assigned to a description of the wonderful tunnel which bears Mr. Sutro's name; and it seems, therefore, that a personal sketch of this great founder may not be amiss, though, really, a history of the Sutro Tunnel is a history of Mr. Sutro himself. The most energetic years of his life have been spent in conceiving and perfecting his great scheme of tapping the Comstock, eighteen hundred feet below the surface, with a tunnel four miles long—and right well has he spent those years. No other man, probably, on all the earth's surface, could have perfected that scheme and brought it to a successful issue in face of such difficulties as Adolph Sutro has encountered for over fourteen years. History will remember Sutro for centuries to come, not only as the projector of the greatest mining enterprise on the American continent, but as a man who, in carrying out his mighty task, met with obstructions of all kinds and conditions that would have appalled many as stout hearts as his perhaps at the very outset. There is something majestic in the way Mr. Sutro overrode all obstacles, raised his capital in the face of ridicule that would have driven other men out of the money marts of Europe, and finally won the American Congress, despite the most violent and powerful opposition, to recognize his project and grant it certain concessions, by which it was enabled to find a ceaseless flow of money for over ten years. No other man than Sutro could have done all this—no other would have dared attempt it even.

Mr. Sutro is about sixty years old. As his name implies, he is a Hebrew of French birth and parentage. Of his early career but little is known, though it is known that he was highly educated in France and Germany, had traveled extensively, and was recognized as a man of tremendous capacity, even before he ever saw America. His first occupation in California was humble, though respectable. Some of his enemies say he kept a cigar store, and others, that he peddled goods; but be this as it may, Mr. Sutro never made any but an honest living.

It was in 1864 that he conceived the plan of his tunnel, and shortly after that he sprang into prominence by means of the project, that, to this day, has never left him. During its construction, a work which he has always managed either in person or by trusted agents in his absence, he has made at least twenty trips to Europe; has spent Winter after Winter in Washington, and been here and there and everywhere—in, fact, as ubiquitous as a graveyard ghost.

Mr. Sutro has an excellent wife, who has shared all his hopes, his fears, and his triumphs, and it is to her in no small degree that he is indebted for the encouragement that enabled him to stem the current of abuse, ridicule, and effort to ruin him and his project, that so frequently swept down upon him. They have several children, all daughters, we believe; and the family now spend most of their time in a beautiful residence at the mouth of the celebrated tunnel.

AUGUST HEMME.

Hanover, Prussia, is the birth-place of August Hemme. Into this old and aristocratic capital of Northern Germany, the home of Klaproth and Schlegel, he made his advent in 1833. At the age of eleven, he emigrated to the United States. The first five years of his residence among us was upon the Atlantic Slope. In 1849 he took up his line of march the second time for a new home, and finally pitched his tent upon the banks of Feather river, California. Here he plied the rocker and the sluice with flattering results until, yielding to the longings for broad acres and cultivated fields, we find him, for the first time, in the *role* of the honest farmer. But nature, it is evident, did not construct our subject on the model of the husbandman. Although he has great admiration for broad horns, blooded equines, huge squashes and mammoth beets, still the metropolis, with its feverish pulses, its sharp competitions, its ring of coin and its stock convulsions, has for him far greater attractions. It is here that his restless and ambitious spirit finds congenial excitement and adequate circumference of action. Benevolent, sociable, genial and enterprising, some great center of aspiring, struggling, antagonizing and sorrowing life is essential to his happiness. Although with an avoirdupoise which breaks the beam on two hundred pounds, and somewhat inclined apparently to the lymphatic, still there is not a single sluggish globule in vein or artery. The currents of life, both of blood and of the nervous, sweep through brain and heart with a vigorous and healthy bound. To think and to do on a kind of high pressure plan, is the natural scale of movement with Mr. Hemme. His chief vocation now for years has been that of an assayer. But while he analyzes ores and refines bullion, we find him with one eye at least shrewdly criticizing the stock market, a field in which few have been more successful than he. Quiet in his operations, he moves in the arena of stocks, unostentatiously, and usually with marked success, as his large acquisitions testify. It is not, however, in the sphere of industrial and speculative life that August Hemme has written history in the most enduring lines. Footprints from which flowers have sprung he has left along every path that he has trod. His hands instinctively reaches out towards the helpless and the tearful. His heart was cast in a broad mold with sympathies that embrace humanity. A direct offspring of the great Germanic Reformation, the sturdy faith of Martin Luther became with him the molding and guiding influence in early life. But few turn towards Christianity with a loftier trust. With him it is the transforming and transfiguring power under which the world is steadily being sculptured into the ideal. And, as a confirmation of this, his purse strings inevitably loosen whenever the needs of the church demand it. His beneficiaries here are princely. The ledger of no man in San Francisco will show so large a balance to his credit in the building up of the bulwarks of Christian civilization as will his. Thus far Mr. Hemme has fulfilled a grand mission—one that carries with it memories fragrant as morning flowers, and as enduring as the immortal. In the self-exile of the young boy of Hanover, the fatherland lost a promise. We, however, in it, won a fulfillment—a fulfillment whose paths of beauty run out without shadow and without end into the realm of the future.

THOMAS HILL.

Our subject is an exotic transplanted from Anglo-Saxon soil—a providence, fortunate both for him and the race, whom he lineally represents. Without this transplanting into the soil of a new continent of broad savannas, lofty mountains, and Amazonic rivers, the genius of his pencil might have still slept. England was lifted above the deep in a moment when the Angel of Sublimity rested from his work—when all the fields of majestic landscape—the nurseries of great painters—must have been finished; hence the providential gift to us of this master delineator of nature. The chalk cliffs, miniature mountains, heavy atmosphere and contracted empire of the Englishman, form no school for the growth of great teachers in the republic of the elegant arts. Geography, sunlight, and aerial temperature, are requisites in the inspiration and culture of great artists. None of these, with the proper qualities or features of constitution, belong to the British Isle; therefore, a true master was saved to art when Thomas Hill turned his back on the graves of his fathers for a home among the grandens and expanses of the New World.

The subject of this sketch was born in Binghampton, England, in 1829. When but ten years of age he emigrated to the United States. His experience has been checkered—a history of constant struggle under difficulties after a lofty end. Through all the vicissitudes of life, the one great thought—the desire to woo Nature, and to transcribe with faithful hand her everlasting manifestations has led and inspired him. Art, to-day, smiles no more approvingly upon any of her gifted ones than upon him. "Yosemite" and "Donner Lake" are creations in which Hill will live in all ages of the republic of scenic beauty. The trauscript of mountains, woods and lakes, however, sometimes for a period, becomes with our subject a matter of less inspiration than the chances and excitements of the Stock Exchange. The profits of a few hundred shares of Sierra Nevada, down in the twenties, has the tendency to quench for the time the light of the pencil. In the presence of such sudden fortunes, the disciple of Polygnotus is apt to become no more than other men—a common creation, treading the lower planes of life with the vulgar, and indulging in the same genuflexions of material worship. The distance and

violence of oscillation between the divine delineations of the pencil and the writing out of a broker's order for mining stock is too broad and comical for description. It, however, illustrates the power of genius, and stamps our subject with the versatility of the infinite.

Modest, loyal to moral principle, and a faithful friend, Thomas Hill, in the grand scene of life, is more than the simple artist. In the aggregate, he reaches the full measure of a man. The creations of his pencil will live after him; but his ministrations at the altar of friendship and of love shall survive them. These shall run out forever and forever as lines of light, parallel with the immortal.

E. J. BALDWIN.

"Some men are born great, some achieve greatness, some have greatness thrust upon them."

To a certain extent the above quotation is true, but often that is attributed to chance, or good luck, that is in fact the result of shrewdness and foresight. The great secret of success in life, and particularly on this coast, lies in the possession of the faculty of embracing opportunities, and there is no community on earth so prolific of opportunities as is California. It is true that occasionally a case of downright stupid luck occurs in the acquisition of quite a sum of money, and particularly does this happen in stock dealing, but as a general rule, the man who happens to call the turn on faro or stock dealing, loses his gain on the succeeding call. Those who acquire permanent and substantial fortunes, either in the stock market, or other more regular branches of business, achieve their good fortune by close study and application to their vocation. They are generally possessed of that all-important faculty called tact; they intuitively know how to take advantage of an opportunity. There are thousands of men in San Francisco who have had the same chances that have been utilized by such men as Flood, Mackay, Fair, Sharon, and the subject of this sketch. Wm. M. Lent has been called foolish, and Jim Keene was at one time ridiculed. These men are called "lucky," while those who term them so, are now, after having the same chances, moving along in the throng of mediocrity, or absolute poverty. These thoughts are suggested as we enter upon a review of the life and experiences of the subject of this sketch.

Mr. Baldwin was born in Butler County, Ohio, about five miles from Hamilton, on the third day of April, 1828, and is now a little over fifty years old. When he was about seven years of age his father moved west into the State of Indiana, about seventy miles east of Chicago, near the home of Hon. Schuyler Colfax; indeed, his father's farm and that of the Colfax family were adjoining. Mr. Baldwin and his brother worked on the farm with their father until he was about twenty years of age. Here he learned what he knows about practical farming, and has found this information of inestimable value in his operations in Southern California. About the age of twenty-one he was married, and soon after left the farm and went to a place called Valparaiso, in Indiana, about forty miles from Chicago. Here he started a country store, and remained in this locality about a year and a half. The railroad had not yet reached this point, but the Michigan Southern was approaching. He built three canal boats which were the first to run on the Illinois Canal from Chicago to St. Louis from 1848 to 1850. From there he went to Racine, Wisconsin, where he remained two years, and was engaged in the grocery business with great success. In 1853 he came to California. He purchased a number of horses and wagons, and a full supply of merchandise, and with a number of passengers started across the plains. At Salt Lake he sold the most of his goods and wares, making a clean profit of between three and four thousand dollars. Arriving at Genoa, he sold his wagons and harness, and started over the mountains with a pack train, and first landed at Placerville, where he remained two or three weeks, and then came to San Francisco, where he recruited his teams, and sold them at excellent prices. This was the successful termination of his first venture in California. It may be mentioned as an episode, that in crossing from Genoa to California, Mr. Baldwin took the route that was then called "Johnson's Cut Off," and went up Gold Canon, directly by the present silver mines of Nevada, the scenes of his later triumphs.

The first venture that he made in San Francisco, which may really be termed the foundation of his present colossal fortune, was the purchase of the Pacific Temperance House, then a thriving hostelry on Pacific street. He kept this establishment for a while, until he had increased the business very materially, when he sold out to a good advantage. Then he opened a new house in Jackson street (in 1854), called the Clinton House. This establishment was located in Jackson, near Front street; and Mr. Baldwin retained the proprietorship about five or six months, when he sold out at a good profit to a Mr. Corbett. Soon after, the house was burned down. He then went into the brick business on Lombard street, with a party who crossed the plains with him. It was soon discovered that Mr. Baldwin was an excellent purchaser, and could make good bargains at selling, and speedily he had made more contracts than the yard could fill. He then concluded to go into the business by himself. It is quite remarkable to note the fact, which shows the tact of the operator, that all of this time he was totally unacquainted with the business, and could not make a brick to save his life. He obtained a treatise on brick-making, and studied the science of the business, and went to work on a large scale. He soon after sold the first bricks that went into the Fort Point fortifications, making remunerative contracts with the Government engineers. Having secured these contracts,

he removed his establishment to Fort Point, and made all of the bricks that were used there, as well as all that were required at Alcatraz. He continued studying the work on brick-making, and soon became an expert, which he had the credit of being long before he knew one kind of brick from another. He was much perplexed at first here, as at these fortifications various kinds of bricks were used; but he mastered the business, and gave perfect satisfaction. For two years he followed this business, supplying the Government with bricks. In addition, he boarded the workmen, and from these two sources realized a mouthly income of from twelve to fifteen hundred dollars. Then he began to look at real estate, and at the Folsom sale in 1855, he purchased a large amount of property, also a lot on Commercial street, on which the stable was located. He then bought out the stable, and went into the livery business, which he carried on for about seven years—all of this time investing in real estate.

Immediately after disposing of his livery business he started among the first adventurers to the mining district of Virginia City. He took with him a number of teams and a large quantity of lumber, and immediately established a lumber yard. He has been, as is generally known, dealing in mines and real estate ever since. He left Virginia City after a brief stay, and came to San Francisco, where he has continued his speculations. Sometimes he was a heavy loser in his mining operations, and at one time was compelled to mortgage all of his property. Thus, it will be seen, he was not always lucky, and it will be observed that, although he has invariably been successful in the long run in most of his operations, Mr. Baldwin has acquired his great wealth by hard study, energy, patience and untiring labor. He is by no means the child of chance, and there are few men on the coast who have so worthily and honestly earned their millions as he. He has studied while others have been recreating, and toiled while others slept.

The first of Mr. Baldwin's operations of any magnitude in stocks was in Crown Point, then in Belcher, Consolidated Virginia, and California, and then in Ophir. He had the foresight to recognize the merit of these mines, and exerted himself to the utmost to induce Mackay, Fair, and John P. Jones to embark with him in the Belcher, but could not succeed. At that time, had he been possessed of sufficient means, he would have obtained the whole of that mine; but the time for his colossal operations was yet a few days off. Soon, however, by gradual advances, he had means sufficient to run mines for himself, and, to use his own words, when the stocks would not go themselves, he would make them move. He has long been independent, has no pools, no co-operators, works by himself, for himself and keeps his own councils. He is not now either the head, foot, or center of any ring.

At the great Ophir conflict, about four years ago, by shrewd management, Mr. Baldwin acquired the possession of over one-half of the entire stock, that is over fifty-five thousand shares, and was full master of the situation, without any outside assistance. Thus it will be seen, that with his other extensive interests in stocks, it was in his power to create a panic at any moment and cause ruin on every side. Such an acquisition of power is dangerous, when wielded by a single hand. He had at one fell swoop at least twenty millions in sight, but pursuing a more humane course, he was content with cleaning up about five millions of dollars. His latest achievement has been obtaining the control of the Justice mine.

These few incidents in a notable career demonstrate the fact that E. J. Baldwin has not sprung mushroom-like into an unnatural prominence among our galaxy of millionaires. He has not flashed into brilliancy, comet-like, to glitter but for an hour and pass away into an obscure oblivion. It has taken him thirty out of the fifty years of his existence to acquire his present position in the financial world. Beginning with almost nothing at the age of twenty, and having been engaged in the space of thirty years in nearly as many pursuits, in all of which he has made successes, he has earned the credit of being something more than "lucky." There have been times in his experience when the skies have lowered, but in every instance, by the exercise of an indomitable energy and will, accompanied by an intuitive shrewdness, he has turned a threatened misfortune into a positive success. Impending danger seems to have been but an incentive to a renewed courage that never counts on luck and never knows defeat. Now, at the age of fifty, it is natural for the possessor of great wealth as well as a critical public, to take an account of stock, and the thought is inevitable—to what end is all this accumulation of wealth. Some thus fortunate are of no service to their fellow men, but live within themselves, and like an oyster, are of no earthly service until the knife of death opens the shell and casts the substance abroad. Not so with the subject of this sketch. While he indulges in the enjoyment of rational comforts of life, as well as a legitimate use of those luxuries that wealth alone can purchase, he has made foot-prints upon the sands of time that no untoward event can obliterate.

First in the order of the benefactions bestowed by Mr. Baldwin upon the community wherein he has acquired so much wealth and so great prominence, are the hotel and theatre that bear his name. At the time when Mr. Baldwin secured the site whereon the building stands, few would have dared to enter upon such an enterprise. His foresight prompted the conviction that the purchase of the land alone was a profitable investment; that trade was tending in that direction, and that all of the social surroundings of the locality would in a short time be such as to contribute to the success of a first-class family hotel. In this subsequent events have demonstrated he was perfectly correct. Ground was broken for the building in April, 1875, and it was completed in about two years. In its construction there were employed about 500

hands, including master-workmen and artisans of all sorts and grades. The building presents a commanding appearance, at the corner of Market and Powell streets. The frontage is in the style of the French *renaissance*, mansard roof, corinthian columns and classic cornices, with modern combinations and ornaments. The Powell street front is 275 feet, and on Market, 210 feet. The structure is surmounted by a number of towers, the highest of which is 162 feet. It was the intention of Mr. Baldwin, at the outset, to make this the most *recherche* hotel in the country, and to this end no expense was spared, and in most respects the desired end was attained, and in addition to the comforts of home-life, here the most luxurious tastes can be gratified. The building is fully fire-proof, and the details in this regard are arranged with a mathematical nicety. The cost of the building and furnishing was over three millions of dollars.

The Academy of Music, or "Baldwin's," as it is called, forms the Eastern portion of the structure, and yet has a separate identity from the hotel. It is the finest theatrical edifice in the city. Its seating capacity is about 1700. Thus, it will be seen, it is not the largest theatre in the city; but in completeness of appointments, it has no superior on this continent or in Europe. The prevailing color of the auditorium is crimson, with upholstering to correspond, which furnishes a most cheerful and cosy air that renders every one at ease. The frescoing and other ornamentation are of the richest character, while in all of the details the stage and appliances are most complete in their arrangement. These are two of the local benefactions conferred upon the community by Mr. Baldwin which will render his name perpetual.

It may be suggested in this connection, that in the prosecution of the material improvements alluded to, the proprietor kept in mind the interests of the community, and yielding to a sense of duty, so arranged his plans that home industries were patronized in every instance where it was practicable. All the lumber for the furniture and many of the fixtures, including the mirrors of both the hotel and theatre, was purchased by the cargo at the East, the Pacific Islands and Mexico, and imported to be worked up by our own home labor. This work was entrusted to the West Coast Furniture Company, and reflects the highest credit upon the establishment, and our artisans in particular. In fact, in all his movements toward improvements, Mr. Baldwin has always patronized home industry.

Nor has the work of improvement ended here. It will be remembered that Mr. Baldwin has purchased the McCrellish property, on Market Street, near the Central Market. The lot contains a frontage on Market Street of one hundred and thirty-seven and a half feet, by one hundred and seventy feet, to a street in the rear, then eighty feet beyond; in all, with the rear street, two hundred and seventy-five feet. It is proposed, at no distant day, to erect a fine market house upon this site, which shall exceed in beauty and convenience of arrangement, every other establishment of the sort in the country. It will be embellished with fountains, and driveways so organized that at all times ladies can drive through the market, obtain refreshments or make their purchases in all weather, without exposure to the elements; and on Saturday evenings the scene will be enlivened with music. Thus is individual wealth utilized for the public good.

Yet this is not all. The versatility of genius and enterprising spirit of the possessor of well-earned millions, could not be circumscribed by the narrow limits of the Metropolis of the Coast. The charms of the garden-spot of California attracted the attention of Mr. Baldwin to Los Angeles County, and about three years ago he purchased sixty thousand acres of some of the best land in that county. Of this tract, there are thirteen thousand acres of as fine corn land as ever the sun shone upon, that needs no irrigation. It is intended soon to put a large portion of this tract into the market, to be sold for small farms. The home tract, which is best known as the Santa Anita Ranch, comprises sixteen thousand acres, about all of which is fenced in, and subdivided into fields of various dimensions. Upon this place is to be found some of the finest stock on the Pacific Coast, or even in the country. There are upon the premises seventeen thoroughbred fillies, three fine stallions—"Rutherford," "Gristed," and a colt called "Lexington," the last of the famous "Lexington" colts. Two fine jacks and one hundred excellent mares for raising mules, about twenty thousand sheep, ten thousand Southdowns, brought from the place of Lord Walsingham, England, a number of rams that cost eight hundred dollars per head, fine merino sheep and lambs, all thoroughbred.

Among the cattle are Jerseys, Alderneys, Guernseys, Short-horns, Durhams, and beef Durhams. There are, also, about four thousand head of hogs on the place.

Last year about seven thousand acres were sown in grain, seven hundred acres in corn, four hundred acres in alfalfa, and about as much more to be put in the coming Winter. Upon this ranch nearly all of the vegetables, etc., for the hotel are raised.

During the last three years there have been employed on the place about two hundred men. Recently the force has been reduced about one-half. A great deal of land has been cleared up, and is now ready for tillage. The entire area is cut up with ditches for various purposes, some for irrigating, and others for drainage, others for running water. There are, also, about six miles of eight-inch pipe, so that all of the water facilities, which are abundant, are utilized. In addition to this, there are a number of artesian wells. The grounds are beautified by a number of artificial lakes, that are supplied by means of the pipes and ditches alluded to.

Upon the premises are about thirty fine buildings, built in rustic style, with many Swiss cottages intermingled. Rustic bridges add a romantic air to the scene. Interspersed are to

be found commodious stables, storehouses, and other outbuildings built in appropriate styles. A school district has been established, and a building supplied, where the children from thirty odd families are taught. These households furnish the labor of the place. It has always been the aim of the proprietor to hire people with families, for reasons that must be obvious. At first a few Chinamen were employed, but it has been demonstrated, that though they work for less wages, it was more profitable to hire white families in the long run. There is a country store on the ranch, which is kept constantly supplied with an ample stock of miscellaneous goods. There is, also, an extensive vegetable garden that supplies the wants of the community, consequently peddlers have no calling on the place, nor are they allowed to enter.

The orchard contains twelve hundred acres, upon which are eighteen thousand orange, lemon and lime trees, eighty acres of English walnut trees, two thousand almond trees, five hundred Italian chestnut trees, bearing; three hundred acres of vineyard, one hundred and seventy acres of foreign grapes, a multitude of peach, apple, pear, plum, white and black fig, and indeed every variety of fruit that can be found in the temperate and semi-tropical climates. There are specimens from Europe, Japan, China, South America and the West Indies. There are, also, about sixty thousand eucalyptus trees, embracing twenty-seven varieties. It is proposed to construct an avenue on the place three miles in length and one hundred and twenty feet in width, upon either side of which will be eucalyptus trees, with a row of the graceful pepper trees in the center, thus forming one of the most picturesque drives imaginable. There are on the premises about three thousand pepper trees in full growth.

The nurseries are very extensive, and contain thousands of trees, all raised on the place. They contain at least sixty thousand budded orange trees, and fully one hundred thousand eucalyptus trees, to be set out along the fences, and in groves of five or six acres each. The grounds are to be beautified also with about twenty fountains, in artificial groves of evergreens. There is near the centre of this romantic domain a hill about seventy-five feet in height, upon which it is proposed before long to erect a stone edifice in English gothic style overlooking the entire premises. It is the intention of the proprietor to make this the most complete and romantic spot in the country. Indeed it may be so regarded at the present moment. Nature, it would seem, had done quite enough to render this one of the most attractive spots on the coast, for she has been more than lavish with her bestowal of attractions; but the excellent taste of the proprietor, with an expenditure of at least four hundred thousand dollars, has drawn forth the latent excellencies of the surroundings, and is fast transforming the primitive elements of beauty into an earthly paradise.

Such is a brief sketch of one of the liberal benefactors of our State. Would there were many more such, possessed alike of wealth and the disposition, by such a liberal distribution of their means, and exhibition of public spirit as well as good taste, to not only develop the resources of their possessions for the gratification of their own fancy, but contribute so largely to the well-being of those by whom they are immediately surrounded, and of the community at large. Let E. J. Baldwin be no longer styled "The Lucky," but let all who learn the details of his peculiar career, accord to him the merited credit of being one of the most enterprising, liberal, and public-spirited of our citizens.

JOHN W. COLEMAN.

Prominent among the members of the San Francisco Stock Exchange, and a leading operator among the operators on the bourse of San Francisco, is John W. Coleman. A lady, sitting in the galleries of the Stock Exchange the other day, asked her broker escort: "Who is that pleasant, quiet-looking gentleman, who doesn't rush on like a wild bull every time the caller rings the bell, and yet is always making note with his pencil?" That was John W. Coleman, as pleasant a man as ever slaughtered a stock—when he wanted to; as cool and cucumber-like a bull as ever bought stock low down, when he wanted to sell 'em up high. Coleman, erstwhile, was a partner—or half a partner, or some kind of a partner—of the late James R. Keene—we mean late resident of San Francisco—and the firm represented a large amount of money, which were profitably employed on the incubating process "buyer thirty" principle, which Baron Wilke will assure you is the safest business in the market.

Mr. Coleman is not exactly a pioneer—that is to say, he didn't come to the Pacific slope in the Fall of '49 or the Spring of '50, and, therefore, wouldn't be eligible to membership in the Pioneer Society, and be entitled to a piece of the Lick Estate; but he came early in 1853, and is a pioneer of twenty-five years' standing, all the same. Mr. Coleman was born and raised in the Blue-grass District of Kentucky, and is a fair representative of that region which always produces men remarkable in many things. Mr. Coleman was born in 1833, and consequently is 45 years of age; but what is age to a man whose fortunes are made, who has a family of which he is proud; a residence at Oakland, which is princely in its dimensions and accommodations?

It was under the administration of Mr. Coleman, as President of the San Francisco Stock and Exchange Board, that the present gorgeous building in which the sessions of the Board are held, was planned and erected. Mr. Coleman devoted all his time to its supervision, and the result is a structure that will last as long as the youngest member shall live, and a great deal longer. It is a splendid monument to the executive ability of Mr. Coleman, and he justly feels

a pride as he daily walks through its halls and surveys its magnificent proportions. He has a right to be proud of the work which was accomplished during his administration as President, from the laying of the corner stone to the inauguration of the new hall.

Mr. Coleman retired from the Presidency of the Board on the completion of the new building, and in his quiet, unostentatious, gentlemanly way resumed his business as a broker—having no clients, however, except himself, unless occasionally importuned by some friend to buy or “carry” a few shares of this or that supposed to be “rising” stock. Mr. Coleman is too big-hearted to refuse an ordinarily reasonable demand of this kind, but as to comply with them all would break the wealthiest broker or operator in the Board; he generally exercises his judgment on the securities wanted.

Of all the genial operators and brokers, commend us to John W. Coleman. He is popular with the brokers; popular with his friends, and by his upright conduct and gentlemanly bearing has won the confidence and esteem of the community.

MARION JASPER McDONALD.

Better known as “Jasper.” This gentleman is one of the famous five McDonald brothers, the biographies of two of whom are published in this number of the MINING REVIEW. There is so much of interest in the career of the subject of this sketch—he has been so closely connected with so many of the memorable incidents in the history of the Pacific Coast—that it is almost impossible to condense even the most salient points of his eventful life within a few pages of our work. Born in Washington County, Kentucky, in 1831, of an old Scotch family, who were among the earliest settlers in that State, he left Macksville, his native town, called after his own family, when about twenty years of age, with but little to begin the world with except a good common school education; a handsome, manly form; an inflexible honesty; and a determination to succeed. He thought he could accomplish his object in Missouri, and tried it for a year. But the stories of the gold mines of California, which were current on the border in 1851, caused him to come here, overland, early in 1852. Not content to travel by the ordinary ox-team of those days, he and his party set out for the dreary and dangerous trip across the plains with mules, making the journey in seventy days—a wonderfully quick trip for those times; his party being the first emigrants to reach the State overland in 1852, arriving in Sacramento on the 7th of July. Like most of the early arrivals, he tried his fortune in the mines, and worked for some time at Wisconsin Hill and Iowa Hill, in Nevada County. A few months of camping out, and a diet of flapjacks, beans, and bacon, and not much luck, satisfied him that mining was not his forte. He joined his brother, R. H., in the drug business, at Sacramento, and compounded pills and potions for about a year. But getting disgusted with drugs, he started a hardware business on his own hook, at Sacramento, which he carried on from 1855 till 1861. The inactivity of retail trade was not congenial to his nature. He got tired of weighing nails and measuring ox-chains. So, leaving his store to his clerks, he embarked in many local enterprises, till the discovery of silver in Washoe, where he went in 1859, and was interested in many of the early locations on the Comstock. His far-seeing sagacity induced him to unite with others in the building of the old Kingsbury and Oglesby roads across the Sierra Nevada, to connect Carson Valley with California. In a very short time, he had splendid roads cut, over which a steady stream of teams and stages passed, till the completion of the Central Pacific Railroad rendered them useless. The tolls on these roads afforded a handsome profit on the investment of nearly \$200,000, expended in their construction.

About this time his health failing, he concluded that a trip in the mountains would do him good. As there were no railroads at that time, he rode on horseback to Salt Lake, and thence into Montana, just then coming into notice as a mining country. He rode on to Montana, and was impressed with the richness of the mines in that young territory. There being no machinery in it for milling or sawing, with the energy characteristic of his family, he sent to Denver, Colorado, and bought a quartz and a lumber mill, and had them hauled as quick as possible into Montana. He purchased an interest in the famous Dacotah Mine, near Bannock City, and expended large sums in developing that and other mines in which he became interested.

An incident that occurred about this time illustrates the character of the man too clearly to be omitted in his biography. Finding it impossible to obtain a quartz mill soon enough to work some of his mines, he set to work to extemporize one, which he made of wood and old wagon iron. He made the dies and shoes for the stamps out of the iron-work of old wagons that had been abandoned by the Lewis and Clark exploring party some thirty years previously. All the rest of the mill was made of wood, and with this crude apparatus he obtained thousands of dollars' worth of gold. After nearly two years spent in Montana, he returned to California in the Spring of 1863, and went back in 1864, but did not remain there long.

While in Montana he discovered the well-known Blue Wing mine, near Bannock City. He was one of the party of nineteen who located and laid out Virginia City, at one time the capital of the Territory, which he named in honor of Virginia City in Nevada. He was a witness of

many stirring scenes in that wild country, being present when Henry Plummer, Stinson and Ray were hanged together by the Vigilantes. He was one of the organizers of the city government of Bannock, and a member of its first Council; was vice-president of the convention that elected the first delegate from the Territory to Congress; and with Governor Doty gave the Territory its name, which was selected from nearly a dozen that were proposed. Its name signifies "a mountainous country." He constructed the first mining ditch in the Territory, at Bannock City, where he had a large merchandise store. He has extensive mining interests in Montana at the present time. At the invitation of his friend, Gen. P. E. Connor, he went to Salt Lake and became extensively interested in mining near Stockton, a town founded by the General.

Soon after this one of his sisters, who resided in California, became a confirmed invalid, and for the benefit of her health, in company with another sister, he went East, and traveled a year over the country, being nearly killed by the wrecking of a railroad train, near Rochester, New York. As soon as he was sufficiently recovered to travel, he returned to California, arriving here in December, 1865, and immediately embarked in the business of mining, and in 1867, purchased a seat in the San Francisco Stock and Exchange Board, and has been one of the most prominent and successful stock dealers ever since. He being one of the very few in the business who has never failed to pay a hundred cents to the dollar in all his business transactions. He has been among the largest and boldest operators, and invested heavily in the development of mines. He was a large owner and one of the original purchasers of the Raymond & Ely, Enreka Con., Golden Chariot and a number of other mines, that are now, or have been valuable. Nor has he confined his operations to gold or silver mines. He was one of the organizers of the Coos Bay, Oregon, Coal Mining Company, and owns a large interest in that valuable property now. At one time he owned a controlling interest in the now famous Sierra Nevada mine, and it was while under his management it paid its only dividends. He also controlled the Ophir and Overman; was the organizer and manager of the Belmont, which, with a number of other valuable mines, he controls at present.

To give even a list of all the enterprises in which he has been or is engaged, would fill several pages of our work. But there are several that are too interesting as historical data to be omitted. For instance: he was one of the original purchasers of the Argenta, Grand Prize and Independence mines, at Tuscarora, Elko County, Nevada. He is interested in the Home-steak, Golden Terra, and other mines in the Black Hills, Dakota; and is always ready to provide capital to develop mines that promise to be productive. Nor is he backward in aiding other enterprises, as was illustrated when the Bank of California suspended; and the building of the Grand Opera House was stopped for want of funds. He furnished the money to complete it. We noted his name as a contributor to the Syndicate to restore that bank to the extent of \$50,000.

Among the many memorable incidents of his active life, it may be mentioned that he was paymaster and business agent of the first telegraph built between San Francisco and Salt Lake, and had the honor of connecting the wires between the Atlantic and Pacific, at Ruby Valley, Nevada, in October, 1861, and listening to the first message that passed across the continent.

In 1873, he was married in this city, and he is now one of the most substantial and respected citizens on the Pacific Coast.

In concluding our brief sketch of Jasper McDonald, we desire to state that when such men as he embark in the business of mining and stock speculating, it is safe to say that it is a legitimate and profitable business, such as encourages the development of the resources of the State; gives employment to labor, and is honorable as any other occupation or profession.

I. M. TAYLOR.

We are not going to enlogize this man. We never knew him to flatter any one else, and we are not going to flatter him. He has even some surface defects that we will not cover up—certain infirmities which, in fact, we are bound to expose. We will not say that he is an unamiable nor an ungracious person, only that he lacks the faculty of exhibiting these qualities in a strong light. He is taciturn at times, to the point of sulkiness; hence many persons on slight acquaintance consider him cold and gronty. Often he really seems so. Nevertheless, he knows a good deal about mines, mills, ores and kindred matters. There are those even who affect to believe that as a mine-viewer he has no superior on this coast; and it is probable enough that in forming a correct judgment of a property of this kind in an impromptu, off-hand sort of way, he is really without an equal. On this point all testimony is concurrent. We have often heard superintendents say that Taylor will pass through a mine and come out with a better appreciation of its value than any other man they ever saw. How he arrives at his conclusions we do not know, and suspect he can hardly tell himself, for he seldom pays much attention to exact measurements or carefully samples ores. He seems to have a native talent for the business, being governed by his innate perceptions or something of the kind, rather than by the opinions of others or any knowledge he may have derived from books. He appears, indeed, to have had not much to do with either mining books or schools, having never been to

Freiberg, or other technical institution. It is said that great poets are born, not made, and we almost think this is the case with great mining experts too. That certain men have natural aptitudes for this vocation is undeniably true, and to this class the subject of our remarks would seem to belong. Such confidence have some people in his ability as an examiner of mines, that if he were to make in the discharge of this duty a grave mistake, they would almost think it wilful.

It is related of the big-hearted Ralston that he had great faith in Taylor's judgment, and employed him often as a mining expert, it being his wont, after getting the reports of the great lights of the profession, to say to this gentleman in his familiar way, "Just take a run up and look at this thing and tell me what you think of it," and without more words the business was attended to. And marvels they were for their brevity, these reports of our expert to the great banker. On his return Ralston, as he saw him enter the bank, would look up with an inquiring "Well?" to which he would get for answer, "Reckon ye better drop it," or "It's a good gamble," or some expression of similar import, accordingly as the property inspected might have impressed him favorably, or otherwise. To the busy Ralston, who hated a tedious, garrulous person, this laconic way of dispatching the business was not unpalatable.

Taylor is notoriously a man of few words, almost too few, and his friends would be glad if he could make himself a little more communicative and affable, as it would help his popularity, at least with strangers. But if he talks but little he generally talks to the point, managing in his concise and monosyllabic way, to say a good deal. As he is brief in speech, so also is he brief in his written reports, which scarcely ever cover more than a few pages of manuscript. He has, however, prepared several lengthy papers of this kind, some of which are regarded as valuable contributions to the mining literature of the coast. His printed report on the Crown Point Mine, before it came fully into bonanza, attracted afterwards great attention for the accuracy with which the future of that property was therein forecast. In the light of subsequent events, this report reads like a prophecy. His article on the treatment of gold-bearing sulphurets, embodying the results of his experiments in this branch of metallurgy, published by Commissioner Raymond in his third volume of Congressional Statistics, is also a paper of much practical value.

Isaac M. Taylor was born in the State of Indiana about thirty-nine years ago, of Scotch Virginia ancestry. Having spent his boyhood on a farm, he was afterwards trained to the calling of an architect and builder. He came to this coast while yet quite young, and has here followed mining in its several departments most of the time since. He is well up in every branch of the business. He can open a mine and work it, put up a quartz mill and run it well, though we do not believe he could open a prayer-meeting, or run a Sunday-school with any success. We say this to justify the remark indulged in at the commencement of this writing, to the effect that he is not a man devoid of failings. He has another weak point, he is an impulsive giver, not of advice, but of money. With all his reticence and seeming stolidity—with all his hate of display and absence of "gush," he is addicted to the bad practice of indiscriminate charity—gives without question, and is generous to a fault.

PARKE & LACY.

Among the most effective and useful implements employed in deep mining are the Burleigh drills, introduced on this coast by Parke & Lacy, the well-known engineers and mining machinery makers of Market Street, San Francisco. These great labor-saving machines are worked by compressed air, which was first used as a motive power for working on the lower levels in deep mines, by these gentlemen; the first experiments being made in the Yellow Jacket Mine, in Nevada, and the Mariposa Mine, in California. Though their introduction was opposed by mining superintendents, miners, and foundrymen, such has been their success, that more than two hundred of these compressed air-drilling machines are in use on this coast, and a number of them are in use in Mexico, Arizona, and Japan. The firm of Parke & Lacy, though only established in this city in 1874, have introduced a number of valuable inventions in machinery. Both members of the firm are practical machinists and engineers. Mr. Parke, the senior member, built the old Gould & Curry Mill, one of the first erected on the Comstock. Such enterprising and skilful men of business are a benefit to the community that sustains them.

THE WEEKLY STOCK REPORT.

The *Weekly Stock Report* is published every Friday by the STOCK REPORT PUBLISHING COMPANY, being under the same ownership as the *Daily Stock Report*. The *Weekly Stock Report* is a handsome eight-page sheet, devoted almost exclusively to mining matters. It contains all the sales in the Stock Boards, compiled and arranged under the immediate direction of Mr. Bunker, and certainly is the best newspaper for reference that has ever been offered to bankers and brokers. In addition to the report of sales, the *Weekly Stock Report* contains the daily review of the market, as given in the *Daily Stock Report*, tables of assessments, dividends, etc., for ready reference, and editorial articles on all the prime topics of the day. The *Weekly Stock Report* is the newspaper for people who reside in the interior, at the East, or abroad.

BULLION AND MONEY.

Although the employment of bullion in the coinage of money is inseparably connected, still we feel called upon to give a reason for publishing the valuable works on "Money," written by Col. Henry S. Fitch, because there may be some persons who may consider the profound studies and admirable writings of that gentleman on the subject of Finance, are not germane to the pages of the *MINING REVIEW*. The articles and speeches of Col. Fitch, which we publish in the present edition, contain matters of the gravest importance to all engaged in mining for the precious metals, or as stockholders in such mines, because, as in the physiology of the human system, a trouble that affects the head—the seat of sensation—may spring from a disordered stomach, so the value of the products of the mines of gold and silver may be seriously affected by the financial system of the country. For instance, an abundant supply of the description of money the Colonel advocates, would increase the profits of mining by reducing the costs of extracting the metals, through less interest on the capital invested, and the lower prices of the materials and labor used, by making money cheaper.

We strongly recommend our readers to study the articles we publish, by permission of Col. Fitch. These articles include "The Money Question," "The Double Standard," "The Co-relation of the Precious Metals" (published from the manuscript). His letter to the *Evening Post*, reviewing the absurdity of President Hayes' position on the silver question, enunciated in his Message; his review of the Silver Bill, when first enacted, made in reply to a request from the Executive Committee of the National Party; his great speech before the Executive Committee of the National Party, in favor of remonetizing silver, and his "Communication to the U. S. Monetary Commission." We are confident that whoever shall read these very able and original articles on the Money Question, will find much in them to remove old and false impressions, and much to give direction to new thoughts on that most important question. These are the reasons why we publish them, and we rely on the intrinsic merits of these papers—their intimate connection with the mining interests of the Pacific Coast, as a full defense for publishing them in the *MINING REVIEW*.

UNITED STATES MONETARY COMMISSION.

NEW YORK, October 1, 1876.

DEAR SIR:—

1. To what causes do you attribute the recent changes in the relative value of silver and gold?
2. What percentage or portion of such change do you attribute to a fall in silver, and what portion to a rise in gold?
3. By what process of reasoning or deduction do you arrive at the conclusion given?
4. What is the present general condition throughout the country of the trade, commercial or financial calling, or productive industry in which you are engaged?
5. If possible, give some statistics, showing the condition of such industry compared with its condition at other periods?
6. If a depression exists, to what cause or causes do you attribute it?
7. Is such depression due in part to a similar depression in some other country or countries, or to a general depression throughout the commercial world? In other words, is it local or general?
8. If the latter, to what causes of world-wide or international application do you attribute such depression?
9. Please furnish the Commission with any other information, bearing on the above subjects, which you possess and desire to communicate.

I am, dear sir, yours very respectfully,

JOHN P. JONES,
Chairman of the Commission.

To Col. HENRY S. FITCH,
Montgomery and Pine Streets,
San Francisco.

SAN FRANCISCO, December, 1876.

DEAR SIR:—In response to your invitation to contribute my views upon the important questions referred to the "United States Monetary Commission" for consideration, I respectfully submit the following.

I am, dear sir, yours most respectfully,

HENRY S. FITCH.

To the Hon. JOHN P. JONES,
Chairman of the United States Monetary Commission,
Washington, D. C.

Question 1. To what causes do you attribute the recent changes in the relative value of gold and silver?

Answer. There is but *one cause*, to wit: The demonetization of silver coinage by the governments of England, Germany, and the United States.

(What has caused these nations to demonetize silver by a limitation of its coinage and a restriction of its legal tender capacity, and the consequent restraint put upon its use, is quite another question, which I will endeavor to make clear in these pages).

Question 2. What percentage or portion of such change do you attribute to a fall in silver, and what portion to a rise in gold?

Answer. The fall in silver must be measured by the percentage of difference at which it is now sold, compared with its mint value before silver was demonetized, and its standard, as well as its relative value to gold, undisturbed.

The loss falls upon silver alone.

There has not been any advance in gold, measured by gold coin. There cannot be any change in its value, except when more or less of this metal is put into the coin it is made to represent.

Question 3. By what process of reasoning or deduction do you arrive at the conclusions given?

Answer. Among all the productions of the earth two were selected of which coined money was made and universally recognized. "Gold" and "silver" have been regarded as the "royal" or "precious" metals. First, because, as metals, they were valuable in the arts. Second, because their production in quantity gave no promise of superabundance, and third, because the civilized nations of the earth united in making of gold and silver a dual monetary coinage, of a fixed standard, as well as representative value. There has been no perceptible variation in the value of an ounce of gold, measured by the coin employed to purchase it, since the period when governments determined upon its adoption as a monetary medium of value. The same may be said of silver, until quite recently, when England took steps to bring about a general demonetization of it, and was blindly followed and aided in her design by Germany and the United States.

The law, therefore, which has governed the value of gold and silver in the past has been neither the difficulty of attainment, nor the cost of its production, as "Adam Smith," "John Stuart Mill," and other eminent writers on finance assert; but was the demand and use of these metals for coinage into money.

A simple solution of the question, "What determines the value of gold and silver?" is arrived at by the computation of the sum in coin which a given amount is capable of being converted into. This is the law which gives to gold and silver a fixed, immutable, and intrinsic value—so long as these metals enter, without limit, into coined money.

It should be remembered that the metals of which money is made are placed beyond the contingencies of a commodity—above the power to fluctuate in value, by the very acts which authorize its coinage into money.

The law prescribes that a given quantity of gold, of a stated fineness, shall enter each of the several gold coin denominations, and so also with silver coin. Were not gold and silver the metals adopted for conversion into money, thereby creating greater demand for these metals for money purposes than for any other uses, the price and value would fluctuate upon as wide a range of extremes as other metals in commercial demand.

To escape an *advance* of the value of these metals, *above* the intrinsic value intended to be put into each coin, it was doubtless determined from the first, to rate their value at a point not likely to be increased by any exigencies of demand for commercial uses; in other words, to make the demand for conversion into money transcend all other demands for it for other purposes.

To suffer gold and silver to fluctuate in value as commodities, would take from the coin of which it is made the intrinsic value given to it, provided the value of gold or silver were to recede; and, if it were to advance beyond its normal value, its functions of a measure would be disturbed.

The creation of money presupposes its endowment with certain functions.

1st. It must be a *legal tender*, that contracts may be adjusted and debts discharged.

2d. It must be an *immutable measure*, by which the computation of sums and payments may be determined.

3d. It must possess *unchangeable value*, that it may be a proper and fixed representative of wealth.

4th. It must be *interchangeable without loss*, for the accommodation of the public use.

5th. It must be made, by the highest authority, an absolute equivalent, to merit public confidence.

These functions and properties of money should be understood, or otherwise we may find difficulty in "regulating it."

The "purchasing power of money" should not be allowed to enter into any consideration affecting the law of its creation. It has nothing to do with it. It has misled the very best writers upon monetary finance.

Money cannot possess one value to-day, and another value to-morrow; and the metals of which coined money is made must possess an equal stability of value. It is only when the

coinage of one or the other metal is discontinued, or limited in quantity by law, or shorn of its legal-tender functions, that the metal so withdrawn from demand is lessened in value. The cost of its production cannot enter into the estimation of gold or silver, for the simple and conclusive reason that the cost of production is so variable that no practical estimation can be made, and no sane person will ever attempt the calculation of it. Neither the cost of commodities, nor the service of man, nor the debts of the nations, nor the constructed properties of the world, have any part in the adjustment or determination of the value of gold and silver. Gold and silver are simply the productions of the earth, utilized and chiefly employed for monetary uses, and thereby wrested from the contingencies of trade and barter.

The Mints of the Government coining money under authority determine the value of gold and silver, so long as these metals are employed as a monetary, circulating medium.

While I do not hold that it is one of the functions of money to determine the value of gold and silver, yet I do believe that the value of these metals must necessarily be determined by the sum of coin which can be made of it.

The introduction of alloy into coinage is for a purpose far beyond the covering of the cost of coining, or the speculation of the government, or the hardening of the coin to prevent abrasion and waste. It is chiefly to prevent the conversion of our coin into the coinage of other nations, and every civilized government has adopted the same means for its protection.

There can be no change in the value of gold and silver so long as the governments hold to the use of coin made of these metals for a circulating medium, unless there be a change in the quantity of gold and silver introduced into the coinage, without change of the standard value of the coin.

Were the silver coins dispensed with by legal demonetization, and the demand for silver for coinage to cease, the price of that metal must necessarily be determined by the same law of demand and supply as govern all other commodities.

No longer a metal of which money is made, it must find a price and depreciated value, more discouraging to the producer than marks the values of productions of common and extensive consumption, since silver would only be in demand for unimportant uses. It is certain that under such a condition—being no farther employed as a monetary medium—the incentive to its production would be lost.

If gold and silver, therefore, shall be retained, as the metals for monetary coinage, without limit, the value thereof cannot be changed, except by an increase or diminution of the amount put into each coin.

The continuance of the Government to employ these metals in the coinage of money presupposes that the coins made therefrom are a *legal tender in any sum*, and any law at variance with, or impairing its functions of a legal tender in any sum, must necessarily result in demonetization of the coin lacking this property.

The Government is now called upon to decide this matter. Money is a conventional unit—a transmissible token of value—a synonym of law, and without a legal tender property cannot be money, and without a fixed status it ceases to be a measure of value.

Laws which sustain and enforce contracts are necessary in all civilized governments. Of what use is such a law in the absence of a legal denominator by which debts, damages, service, and commodities may be measured and paid?

The measure of value, which Congress is only authorized to prescribe for its several monetary creations, should be as absolute and indisputable as the measures of length, weight, and quantity. The coinage of the nation, having upon its face the stamped and fixed value established by Congress, is money.

It is made so by *fiat* of the Government. Governmental legislation everywhere prescribes of what money shall consist, and the authority of a government in this cannot be disputed. Money is the fiat of sovereign power, which to deny is the denial of the powers of Congress to do that which it is especially chartered to perform by the Constitution.

The Government has wisely established for our understanding measures of weight, length and quantity that none dispute, and any repudiation of the legislative authority of the Government, to say what shall be money, is as reprehensible as an effort to make a yard less or more in length, or a bushel of less or more quantity, or a pound of less or more weight—all of which are legal measures and stand undisturbed.

What is the use of a measure for money without a representative of it in form?

If these premises be true, there can be nothing more reasonable than the conclusion arrived at below, viz:

1st. That gold bullion of standard fineness must bear a value co-equal with the coin it is capable of being made into, less the costs of conversion and the per cent. of seigniorage claimed by the Government.

2d. That gold coin of any nation cannot advance above, or fall below, its nominal or standard value, in the countries in which it is coined.

3d. That silver demonetized becomes a commodity, and whether coin or bullion, the value must depend upon *supply and demand*, as with other articles of commerce.

4th. That the loss must fall upon the metal, unsupported by the demand for coinage.

5th. That the decline in the value of silver is wholly attributable to its demonetization, in whole or in part, as the case may be. For instance, if fully remonetized, it would stand on a

par with gold, as 16 to 1, if that should become the quantitative relation. If limited in extent as coinage the coin, as well as the bullion, would fall below the standard. If carried further, and shorn of its legal-tender capacity, the fall would still be greater, and, if its coinage were discontinued by the nations, it would sink to the level of other commodities, being unsupported by any demand for monetary use.

From these reflections, it appears that the action of this Government in relation to silver coinage is of the utmost importance—a partial remonetizing of it, by any restrictive or limiting propositions, virtually leaves silver at the “mercy of the market,” and subject to continual fluctuations in value, and consequently reduces the coin, which may only in part be made of that metal, to all the vicissitudes of unreal and debased money. Indeed, it would not be money at all—simple bits of silver bullion. While, if fully remonetized, not only the bullion but the coinage, would become as permanently established in value as gold.

In what I shall submit to the consideration of your “Honorable Commission,” in these after pages, as my answer to the self-imposed questions of “What is money?” and “What is *honest money*?” your Honorable Commission will observe the grounds upon which the foregoing assumptions rest.

Question 4. What is the present general condition throughout the country of the trade, commercial, or financial calling or productive industry in which you are engaged?

Answer. My occupation has been that of mining for gold and silver during the last sixteen years. I do not consider that class of industry as generally remunerative. My own condition may be considered the general condition, success being exceptional. Among the causes which operate against a greater average of success, may be attributed the scarcity of money and the consequent high rate of interest demanded for its use.

The Pacific States, according to my observations, present very rare instances of prosperity, save and except the occupations of trading in, and of *loaning money*. Fifteen to sixty per cent. per annum for money implies a stringency of the money supply so absolute, that general prosperity will not (very naturally) be inferred.

Question 5. If possible, give some statistics showing the condition of such industry, compared with its condition at other periods.

Answer. Statistics are not conveniently attainable. The rate of interest for the use of money during the last twenty-seven years, has ranged from fifteen to eighty-four per cent. per annum, when employed in mining and manufacturing enterprises outside of San Francisco. There has been no period during my residence on this coast (twenty-seven years) sufficiently marked by continued prosperity to justify a special mention in these papers. Statistics, therefore, showing the condition of our people, financially, would not be of very great value from this section of the country; our exceptional cases of success are heralded with so much *eclat* that the world may readily infer how rarely they occur.

Question 6. If a depression exists, to what cause or causes do you attribute it?

Answer. The cause of the depression which now, and for so long a time has existed in these Pacific Coast States, is the insufficient supply of money, recently very considerably aggravated by the demonetization of silver.

Question 7. Is such depression due, in part, to a similar depression in some other country or countries, or to a general depression throughout the commercial world?

Answer. Like causes produce like results. Wherever money commands a higher rate of interest than the average per cent. of increase in production, the people have just cause to complain, and depression will be evident. Doubtless there are many sections of the United States suffering from the same causes of depression which afflict the Pacific Coast States. The inadequate supply of money is the *cause*; the lack of enterprise and employment of the laboring arms of the country is incident to it. So far as I am informed upon the subject, I believe the depression to be *general* in the United States.

Question 8. If to the latter, to which cause of world-wide or international application do you attribute such depression?

Answer. There is nothing which will so thoroughly shock Christendom as to touch the money of Christendom.

For centuries the money of the world has consisted of gold and silver. An effort to destroy one half of the world's money may not only alarm those who have money of the kind menaced, but drive into despair those who have it not, and who depend upon their labor for support. The effect of demonetizing silver is greater than the destruction of one half of the money of the civilized world. It reaches out, with a withering touch, to the commodities of the world, and while gold coin is worth no more than its standard value, commodities, and the service of man, and all properties, are made to shrink into accommodation with this new and unhappy condition of retrogression.

Still more: The disposition to hoard; to let lie idle in banks; to concentrate in a few hands, and to withdraw from circulation, is as natural as that fear stimulates caution, and pinching parsimony grows into avarice.

Were this scheme of demonetization of silver to succeed, the rate of interest that would be told for the use of money would sweep every debtor into bankruptcy, and subject all productions, even that of gold, to the avaricious behests of capital. Whoever hath done this thing has earned the world's anathema.

It is possible that England and Germany may have commenced to feel the effect of demonetizing silver, and, if there exists a depressed condition in those countries, it may in part be attributable to this cause.

The United States, not having silver in general circulation, have been affected by its fall, indirectly, and not sufficiently to afford an understanding of the enormity of the proposition.

WHAT ARE MEASURES OF VALUE?

All mathematical designations of a sum are measures of value.

In the United States the *dollar* (100 cents) is the cardinal measure of value, susceptible of a division into fractional parts, as the "half," "quarter," "twenty-cent," "dime," etc., and of advancing its multiple into designations of a larger sum.

The "dollar" and its multiple is, then, the radical measure of a value, as absolutely as a *yard* is the measure of *length*, the *pound* the measure of weight, or the *bushel* the measure of quantity.

By this measure do we calculate the value of commodities, properties, services, debts, etc.

By this measure do we estimate wealth, individual, corporate, and national.

By this measure do we compute all profits, all losses, and all damages.

Hence a *fixed measure of value* is requisite, and has been instituted for the convenience of the people—varying from the measure of value adopted by other nations, in unimportant particulars.

This measure assists us to determine a sum as by a mathematical denominator, and would be valuable to us only for that service if we were left without a device or devices which actually represent values in themselves, equivalent to this monetary measure. For this purpose money has been instituted—endowed with functions which, in the nature of its varied uses, keep it constantly and reliably up to the measure it represents.

WHAT IS MONEY?

Money is an inflexible denominator, a symbol of a legal value, an expression of sovereignty, a conventional unit, a legal tender, a nominal equivalent, an immutable *quid pro quo*, a device of the governments, intended to fill with exactitude the measures of value legally instituted; and to fulfill, by virtue of its functions, the requirements of interchangeability, exchangeability and the payment of debts.

None but the supreme powers of the Government are capable of endowing money with the functions requisite to answer these demands.

Money must be an inflexible denominator, that contracts may be entered into, and stipulations may be made between parties, without the apprehension of a possible diminution or increase in the monetary consideration.

It is a symbol of legal value, because it is a lawful representative, which carries the statute upon its face.

It is an expression of sovereignty, because it is created by the highest power of the realm, and stamped with the seal of authority.

It must be a legal tender, that its acceptance for debt shall be compulsory, and not optional.

It must be a nominal equivalent, that it may be interchangeable without loss to any.

It must be an immutable *quid pro quo*, that commodities and all purchasable things may be readily exchanged for it, and as a vehicle of use, unlimited in its service.

It must be a conventional unit, that all may accept it without murmur or complaint, as by common favor, being just to all, and injurious to none.

Money must be *lawful, secure, and a legal tender*.

Money must be free from the tortures which attend commodities. It must be exempt from all the vicissitudes of barter.

Its standard must be unquestioned, its value and power undisputed, and its acceptance and usefulness unbridged by any limitations or restrictions whatever.

If more than one kind of money is created by the Government, the one must be the full equivalent of the other. Silver coin is not money if it be made subordinate to gold coin. Silver must be equal with gold.

Its standard of relation to gold must be determined, and made unalterable. The coinage of one must be made by law to fill the measure of value represented by the other, and each must be held the absolute equivalent of the other in monetary use.

Any legal discrimination between the two kinds of coinage, any function or property granted to the one and denied to the other, destroys the unity and infracts the law of its creation as money.

Coin or money, so shorn of any function or property possessed by the other, becomes absolutely demonetized, and reduced to all the contingencies of a commodity.

The law creating money makes money superior to commodities, in that it is made to fill an unalterable measure, and its value cannot fall below nor rise above the standard it is made to represent.

The issues of private or corporate banks have been sometimes called money, because voluntarily accepted and received in the discharge of debts and the common transactions of business, but such issues are not, and never were, money in the sense and quality which belong to the term. It is only in the consideration of its acceptance as a *substitute* that such issues found any

favor whatever; and the term "money" so widely misapplied. That is not money which is not a legal tender—made so by the highest authority.

Money must possess the statutory force to compel its acceptance for debt and the liquidation of damages. Considering that there is no power authorized to make or coin money of a legal-tender quality, save Congress, it is quite certain that attempts by corporations, or by States lacking this power, can only result in the production of a *quasi* convertible commodity, mischievous in its tendencies as it is illegal and clearly a usurpation of the functions of the Government.

The value of money must be fixed and immutable. It must not exceed, nor fall below the measure, or power, given to it.

The value or price of commodities may change continually, and thereby the purchasing power of money may be subject to very great alternations, but money *per se* remains at its fixed standard, and there is nothing in the price of commodities that can advance or reduce the value of a dollar above or below the standard given to it by law. The fiction, therefore, "that money changes in value according to its purchasing power," is no less delusive than that *other fiction* which declares that "the money supply of a country is the just measure of the property valuation of a country," both of which propositions seem to be a favorite thesis with some writers on finance. The unsoundness of the last proposition needs only a computation of the sum of taxes that it would be practicable to collect upon such an assessment, to discover itself.

Money, as an agency of trade, a servant of labor and property, an admitted medium of exchange, must be actual as well as apparatus. This cannot be if its property of an equivalent or function of a tender is impaired in the least. Money is something more than *tokens*, the value of which are determined by weight, as bullion.

One government may take by weight the coinage of another. There are good reasons for so doing; but it were indeed a bad condition of the people if they were obliged to resort to the same measures for their protection.

Every government may, for the use of its own, make money superior to bullion, and regulate the value thereof, so that it shall be entirely acceptable to the people, for whose use it is made, and yet be very unprofitable to export.

Section 14, Revised Laws, relative to Mints and Assay Offices, says, "that the *gold coin* of the United States shall be a *one-dollar piece*, which at the standard weight of $25\frac{8}{10}$ grains shall be a unit of value; a *quarter-eagle*, or two-and-a-half-dollar piece; a *three-dollar piece*; a *half-eagle*, or five-dollar piece; an *eagle*, or ten-dollar piece; and a *double-eagle*, or twenty-dollar piece, which coins shall be a legal tender in all payments at their nominal value."

Section 15 says, "that silver coins of the United States shall be a *trade dollar*; a *half-dollar*, or fifty-cent piece; a *quarter-dollar*, or twenty-five-cent piece; and a *dime*, or ten-cent piece. And the weight of the trade dollar shall be 420 grains troy; the weight of the half-dollar shall be 12 grammes and one-half of a gramme; the quarter-dollar and the dime shall be, respectively, one-half and one-fifth of the weight of said half-dollar; and said coins shall be a legal tender at their nominal value, for any amount not exceeding five dollars in any one payment."

Here we have a law of the United States which establishes the standard of its coins, making the one a legal tender in any sum, and the other a legal tender "in any sum" *not exceeding five dollars*.

Here is the establishment of a standard without a status.

After determining the standard of the two kinds of coin, which it intended to make of equivalent value, Congress debases the value of silver coin, by limiting its legal tender capacity, thereby abridging its uses as money.

There seems to have been a misapprehension of what constituted money.

The legal tender property of money must be equal with the measure of value which is given to it. Its face must denote the standard of its equivalence.

Money must be a sensible representative of value. The inscription "one dollar" (for instance) stamped upon a coin, signifies—informs of—represents its value, as absolutely in an aggregated sum as in a single piece.

Any after qualification of the functions of its use is without the warrant of justice or good policy.

The *legal tender* is the special quality given to money to make it supreme, and to make its acceptance unquestionable. It cannot otherwise be made to fulfill the requirements of commercial and interchangeable uses.

All limitations and restrictions upon its powers must, therefore, be removed. Money is a measure of value, as a yard is the measure of length, but it is endowed with other properties and functions quite as important as its function of a measure. It is a nominal measure; it is a legal equivalent of the measure given; it is a legal and fixed representative of wealth; it is property raised above the contingencies of barter; it is the legal mandate of the Government and must pass in the exchange of property and for debts at the measure of its face; it must possess the function of a tender, that it may serve equally the Government and the people, the debtor and the creditor, the purchaser and the seller, the laborer and the employer, the taxpayer and the collector, etc. It cannot be capable of this service if its equivalence of value is unequal to its face or its nominal measure.

It is not money if one dollar and its multiple in any and all payments can be legally refused.

As a general proposition, money, made of both gold and silver, should carry in the coin of either the proportion of metal which shall make them equivalents, according to the quantitative standard agreed upon.

If contingencies arise which justify a departure from this rule, such as a desire on the part of Government to enforce a retention (for instance) of gold coin within its sovereign limits, or to obviate a too free export of it, the Government may discriminate in favor of its domestic policy, and make gold coin of less weight of gold than its face and quantitative relation to silver would imply.

This action, at the present time, seems more likely to occur in relation to gold, because the cost of its handling, transportation, and common request affords to it temporary preference; but when the standard of relation of the two metals shall be established, money of gold would be only preferable to silver for its carrying convenience, and that can be neutralized by the creation of a Governmental paper money, of equal purchasing power, still more convenient to carry than gold.

There may be an ample justification for reducing the weight of gold in our gold coin to meet the foregoing or any other important emergency.

The equivalent properties of money consist in part (when coined) of the intrinsic value of the metal it contains, and in part of its power of service as a tender.

Legal tender is the appurtenance which attaches to money, by the law of its creation; and it must be absolute and unquestionable. It is not necessary to be published upon the face of money. It is understood as the indisputable quality of an equivalent, to be paid and to be received equally, without question, and respected as the multipotent utterance of sovereign will.

The limitation of the legal tender power of the greenback seems to have been the cause which produced the difference of value between gold and the greenback currency. The demand for gold was the natural result of this limitation. It was a demand to meet an *exigency created by the very act of limitation* which caused the premium on gold for the last fourteen years. It was the cause of speculation in gold, and all its attending evils. It was the cause which led many of our citizens to draw deeds and contracts payable in gold. It was the primary cause of discrimination and preference for one kind of money over another.

The difference in the value of gold and silver coins, to-day, is the consequence of one coin being a legal tender for any sum, and the other a tender only to the sum of five dollars.

With this view of the question, is it not conclusive that any limitation, restriction, or legal discrimination in any monetary issue of the Government, should be regarded as unwise, impolitic, and unconstitutional?

The tender power of money is precisely what raises money above the level of commodities; shorn of this power, its inflexible measure is lost, its use as a commercial unit abridged, and as a denominator of constant value it is shamefully misnamed.

WHAT IS HONEST MONEY?

All money is honest money. Money, so called, which is not a legal tender in any and all sums, and acceptable for all commodities, dues, properties, and services, is *not money*, and it is a fraud upon the people to put it into circulation.

Gold coin is honest money, having the full functions of legal tender. Silver coin, reinstated as money, being a legal tender in any and all sums, would be honest money. Greenbacks, an issue of the Government, legal tender for all debts and dues at its face, would be honest money.

These classes of money would be honest:

1st. Because of a national decree which makes their acceptances compulsory for all debts and dues.

2d. Because the two first-named possess an intrinsic value, equal to the value of the bullion in each—legal tenders, and exchangeable at the Mints of the Government, at par, for its new coinage after abrasion and waste, without loss to the holder.

3d. The greenback (were it endowed with full legal tender power), because it would be the mandatory expression of the Government; the sovereign will, supported and upheld by all the properties of the nation, and being an instrument of convenient use, raised above distrust by its interchangeability for gold and silver, and convertibility into the interest-bearing bonds of the nation, or other securities.

4th. - Because these three kinds of money are one, in the sense of its acceptability and use, within the limits of the nation, unattended with any demands which it is not made to answer, and a fit representative of the wealth of the nation, being exchangeable for its highest securities, and having a perfect money value.

5th. Because this honest money is made by the Government (and not farmed out to the jobbing corporations, less responsible), possessing an adequate intrinsic value in its coinage, and an indestructible security for its paper representations in the properties of the whole nation.

It is time that the people came to understand the difference between the money created by the Government and the *irresponsible issues* of banking incorporations. The only money we have ever had came to the people from the Government; none other is permitted to make money; hence, there has been very little *money, per se*, in circulation since the foundation of our Government. Congress failing in its duty to the people, of providing money, the capitalists

of the country were permitted to organize banks of issue, and emitted large sums upon a suppositious substratum of coin. Their notes so issued, were printed, "*payable on demand.*" The term "redemption" came into use, not from a redemption of their bills, but because of a *failure to redeem them*, and these bank issues and frequent failures have resulted in so much profit to these institutions that they have attempted to monopolize the monetary supply of the country.

The Act of Congress issuing the greenbacks alarmed these money powers greatly, and judging from the number of National Banks in existence, and the consequent raid upon the greenback, the attacks upon the Government credit, the demonetizing of silver, and various other measures, destructive alike of the credit of the Government and growing interests of the people, it may be inferred that the ambition of these bank *powers* are in a fair way of being gratified.

It is, therefore, very proper that the people should learn to distinguish between what is the real money of the Government—"honest money"—and that questionable contrivance of banking corporations which is so pertinaciously pushed forward as a substitute.

All of the loss by the failure of these private corporation banks has fallen upon the people—hence, the distrust of the people; and this very distrust and doubt, born of these private bank failures, is unwittingly turned against the Governmental issue of paper, as if it were irresponsible and unauthorized to say what shall constitute the money of the realm.

"Honest money" can only come from the Government, and even then the issue must be a legal tender in any and all sums, for any and all purposes of payment. Without this important property in money—though issued by the Government—it is neither honest money, nor money of account. Were the Government to issue paper money after the form of the usual bank notes, "*payable in coin on demand,*" it would not be "*honest money,*" because, like the banks, it would be making a promise which it were impossible to perform, and, therefore, false to the people, who do not require such pledge.

"Money of the United States," of different denominations, is all that is required upon its face. This, resting upon the law authorizing its creation, and providing for its use and interchangeability, would be *honest money and acceptable.* Banks would thus be forced to use only the legal tender—the honest money—of the Government, and the word "redemption" would cease to be used in connection with money affairs. Banks would become institutions for deposit and loan, and the Government will have severed its connection with them, and the cause of failures and of panics would no longer necessarily exist in the nation.

THE QUANTITATIVE RELATION OF GOLD AND SILVER.

The coining of money of gold and silver pre-supposes the establishment of a fixed quantitative relation of these metals. The Government may declare that sixteen pounds of silver shall be the equivalent of one pound of gold; but the Government, even, *cannot perpetuate that relation by any device whatever, except by the full, unrestricted, and unlimited monetization of the two metals.*

These metals, employed for monetary purposes, must be raised above the contingencies of a commodity, and the relation which each bears to the other can only be maintained, and the coinage of each kept up to its full monetary measure by a law which establishes their perfect equality.

The full and free monetization of silver, that is, the making of it into money—possessing all the functions of use given to gold coin, *will* establish the value of silver upon as permanent a basal foundation as gold.

Were the nations of the earth to adopt this method of settling this question, there would be none to complain of a redundancy of silver during the next hundred years, for the reason that silver money would become as absolutely the measure of value, and of wealth, as gold money.

To establish this desired equality and unity there must not be any governmental limitations of the quantity which may be coined, because that would result in leaving a remainder, surplus or balance, to be disposed of for other uses than money, and this balance, left unsupported by demand for monetary use, would necessarily fall upon the market, subject to the conditions of demand and supply, and alternate in value, as do other commodities.

The price of silver, made by dependence upon a market unsupported by demand for monetary use, would speedily show itself upon the estimation in which that coin would be held.

There must not be two markets for silver. It must have one unchanging value, and that must be estimated by the amount of coin it can be converted into *by coinage.*

The value of silver, established upon this principle, *determines* the price of it for uses in the arts, and is not more subject to mutation than coined money.

There must not be any restrictions placed upon the monetary functions of coined silver, because that would effect an abridgement of its use, and create an exigency of demand for gold, to supply the place that silver money, so debased, could not fill.

There being no legal discrimination between the coinage of gold and silver, their relative and interchangeable use would become permanently established, and the bullion of each would be rated at a valuation as inflexible as money.

We perceive that gold is not subject to mutations of value, simply because the price and value of that metal is raised above the price it would command for uses in the arts alone, by the

demand for it as a monetary medium, the value always understood to be the sum of coin it is capable of being converted into, less the cost of conversion, and the seigniorage of the Government.

The coinage of gold constitutes a money, unrestricted in its functions, and therefore unchanging in value; and the value is equally as constant for the bullion of gold.

It is, then, the monetization of the metals of gold and silver which raises them above the sphere of fluctuating demand or value, and *holds them constantly* to a fixed monetary standard, making the maintenance of a quantitative relation of these metals practicable.

IF THE GOVERNMENT CONTINUES THE DEMONETIZATION OF SILVER, WHAT WILL BE THE EFFECT UPON THE GOVERNED?

The demonetization of silver reduces the volume of money in a sum equal to the possibilities^s of its coinage if remonetized, and as the sum may be equal to our production, it follows that the country would be deprived of the use of thirty or forty millions of dollars per annum—say one half of the metallic, annual, monetary supply of the country. If the metallic money was all we had to depend upon, and the reduction of one half of it shall take place, it will be observed that the sum remaining in circulation would be so reduced that it could be easily cornered and controlled by any combination of moneyed men for that purpose. This done, the rate of interest would be greatly advanced—the values of all commodities, properties, and the price of labor would be greatly reduced. Those who possessed money would be greatly benefited, while the mass of the people—debtors, property-holders and laborers—would be greatly injured. The money powers would find their means increased by the *doubling of the purchasing power of their money*, while those possessed of property would suffer loss in equal ratio.

Legislation which shall produce these effects upon the people is unjust as well as impolitic, since it would favor those who were above the need of favor, and distress the greater number, who rely upon the Government to protect them from oppression.

Money counts as money, what its face implies; if it count less it is because of its being debased by a limitation of its functions, or by abrasion and waste. Of our present silver coinage we have to say, that as a dollar its measure is accurate, but in the sum of one hundred dollars it is neither a measure of one hundred dollars, nor an admitted equivalent in that sum. To call this coinage money is misusing the term to mislead the people.

Silver coin so limited in its functions, is deprived of the uses for which money is instituted. Let us observe its operation on the Pacific Coast. The newspaper publishers are obliged to receive the coin at par, for the printed papers, while they are debarred from paying in the same coin for the blank paper in quantity. Laborers are paid in silver coin at par, while they are legally estopped from paying the same coin for the rent of their houses or rooms, or any other necessity, where the cost is above five dollars. For all small-priced articles the merchant is obliged to receive this silver coin at par, while he is made to pay the debt he contracted in the purchase of the articles sold in gold coin.

We are permitted to purchase and pay for a pair of shoes in silver coin, but we cannot so pay for a pair of boots. A cheap vest may be paid for in silver, but a coat or a suit of clothes must be paid for in gold. We pay for a meal (if not too hungry) with silver, while, for a week's board, gold coin is demanded. We may pay for a slouched hat in silver, but, if having occasion to purchase two of them, or one of a better quality, we are obliged to change our silver, at a discount, for gold coin.

Five dollars in silver will purchase a ticket for passage to a certain distance upon the railroad; but, if we desire to go only to the next station beyond, we are required to pay in gold coin—although not more than twenty-five cents be added to the sum, as measured by "dollars" and "cents."

Five dollars seems to be *good money*, but five dollars and fifty cents, or any greater sum, because offered in one payment, is *bad money*, and not worth what our beneficent Government has stamped upon its face as the *true value*.

To "regulate the value" of money is quite opposite to the late act of the Government in debasing its silver coin. It seems to be a misapplication of the powers of Congress, to debase its monetary creations. It may withdraw it from circulation, or discontinue its use, but not debase it. If silver coin is good and valid money in the sum of five dollars, what shall depreciate its value when payment is offered in the sums of ten, twenty, forty, or one hundred dollars, or any larger sum? And if there is no difference in the intrinsic value of each one-dollar piece, to the number of one hundred or one hundred thousand dollars, what shall justify a refusal to receive it in that or any larger sum? The only justification which people assume to have is not the distrust of the true value of the coin, but the *inability to use*, because of the limitation of the sum in which it may be paid. This is the objection. A law unnecessary, and absolutely more annoying and mischievous in its tendencies than any other law of Congress made during our national existence.

The inconveniences of a silver coin, of limited legal tender, may have been sufficiently stated. Let us now proceed to show the impolicy of such an act:

First. If gold is made the only standard, we unnecessarily confine the operations of the country to the use of a very limited supply of money, absolutely inadequate to the demands of trade.

Second. The interest and principal of our national indebtedness must be paid in gold coin, (not to mention other indebtedness) which is more than three times the sum of our annual production and coinage.

Third. The rate of interest for the use of money must, of necessity, become greatly advanced.

Fourth. Properties of every description must incidentally suffer a great reduction in value; and, much of it being mortgaged, the mortgagees would find themselves insufficiently secured; while the debtor class would be placed under such a burden as would make it impossible for them to discharge their indebtedness.

Fifth. While money would in no sense advance in value, the decline in the value of commodities, properties, and labor would be so great that the purchasing power of money would be more than double. The masses of the people would become absolutely subject to and dependent upon the money powers of the country—a sorry dependence—a condition, certainly quite opposite to what the people desire, and certainly have not anticipated as the result of legislation.

Sixth. It would involve the employment of an army of men, in the occupation of shaving and discounting the debased coin and currency, indifferently circulating at whatever it would bring as a commodity, and who, by the very nature of their occupation, breed distrust and excite denunciation of the Government.

Seventh. It would result in an effort to compel the Government to redeem, not only the greenbacks in gold coin, but also the National Bank notes for which the Government stands pledged; and, to redeem these, the interest-bearing debt of the nation would be increased considerably more than the sum of these two kinds of paper money in circulation. In other words, it would have a tendency to enforce the Government to attempt the performance of an utter impossibility, for it is clearly impossible to obtain from any or all of the nations of the earth a sum in gold coin equal to a demand so enormous.

The establishment of a single gold standard would lessen very considerably the production of gold, in that silver being demonetized by this Government, other governments would be induced to take the same action in relation to it, and a *general demonetization* of silver would reduce that metal to all the contingencies of a commodity, and its depreciation, when demanded only for use in the arts, would be so great, that search or mining for silver would cease to be profitable or remunerative. Hence, the gold with which it is found associated (although generally estimated at about one-half) would not furnish a sufficient inducement to encourage a continuance of its production, except in very rare instances.

WHAT IS INFLATION?

The term inflation, as applied to money affairs, means a *redundancy of money*; certainly a condition which has never existed in the United States for one moment during its national life, and never can exist while the rate of interest for the use of money is held above two and a half per cent per annum.

The rate of interest charged for the use of money is the *inferential measure of the supply of it*.

England, France and Germany—countries possessing the largest accumulations—have supplied money for the use and support of their several industries at 2½ and 3 per cent per annum interest, for more than a century, and have been able to loan in large sums to other nations, without it ever having occurred to any of them that a condition of inflation of money existed.

Inflation, or a plethora of money, is claimed by some of our people to be hurtful to the interests of the country, because of the advance in the value of commodities, the increased cost of living, and the advanced price of labor.

May not these effects be questioned?

How is it with the people of the countries named? Are not commodities, living, and labor to be had at less cost in those countries where money is unquestionably abundant than in the United States, where we possess a meagre supply?

Are there any existing causes operating which make an abundant supply of money to foreign nations a blessing and so supplied to us a curse?

Can we not utilize and find employment for money at 3 per cent per annum as advantageously as any other people?

If having money in this country as abundant as 3 per cent per annum would imply, is there necessarily a condition of inflation?

Are we not, in productive and industrial pursuits, competing with England, France and Germany? and with all of our natural resources and industrial energy can we compete successfully with these powers without an equal supply of money and as low a rate of interest?

Is not the insufficient supply of money and the high rate of interest the distinct and underlying cause which prevents the people of this nation from occupying the front and foremost rank in productive, manufacturing and commercial prosperity?

The rate of interest being the measure of the supply of money, may we not ask if there can be a redundancy of it, where money commands from ten to sixty per cent per annum?

Yet we hear it frequently declared, by those whose interests are promoted by the mainten-

ance of a *high rate of interest*, that "money is abundant!" "That the proposition to remonete silver is a 'scheme of inflation!'"

Inflation, in the sense commonly used, refers to quantity of money, and not to description of money. We cannot justly declare that England is in a state of inflation—that she is cursed with a redundancy of money, and that her power and importance as a nation is abridged thereby.

On the other hand, were it not well for us if we could truthfully declare that the people of the United States were possessed of an equal monetary accumulation—that we were out of debt, and held as great a part of the world under obligations to pay us tribute and perpetually add to an already rotund exchequer?

There cannot be redundancy, nor inflation, nor plethora of money in a country like our own. Ours is so broad an empire, stored with such illimitable resources, occupied by a people possessing the most tremendous energy and enterprise, that we need feel no alarm at the possibilities of our achievements, under a wise and liberal monetary supply.

There may have been, in certain periods of the past, an inflation of individual and corporate credit, and a too great strain upon that credit may have resulted in disaster, but that has nothing whatever to do with the proper monetary provision of the Government.

A little reflection upon this subject will convince us that inflation is not a condition from which we are likely to suffer in the near future, and that none now use the term with proper understanding of it, save those whose selfishness obscures all comprehension of the public welfare.

THE CAUSES WHICH INDUCED ENGLAND TO EFFECT A GENERAL DEMONETIZATION OF SILVER.

English policy means to *lead* and to *mislead*. Whatever shall confound, distress, or overthrow any other government, England views with a satisfaction unspeakable. Whatever shall help to bind other nations to pay tribute to England is her crowning joy.

Whatever the conditions of other nations, English diplomacy and financial strategy is ever set to make them, soon or late, subject to England's imperious will, for in this lies the promise and hope of supremacy. To these ends the highest efforts of her statesmen are consecrated. Every book upon finance, every financial article of her press, every report of her Minister of the Exchequer, are framed to mislead the mind and apprehension of other peoples.

Her offspring and agents of her policy inhabit every land, quick to waken strife, side with treason, and sow distrust of every government (save their own) under which they may live; opposed to every proposition or measure which fails to conserve English interests.

In our own country these agents of English policy are multiplied by thousands. They stand upon every avenue of trade.

They teach the delusive doctrine that English finance is an established science, and that it, like an English watch, can be run in all countries alike.

They take no cognizance of the existing difference between a nation *out of debt* and possessing large accumulations of money, and a nation largely *in debt*, with no adequate means of payment.

They conveniently ignore the unequal financial status of the boy who starts out in life with a capital of *ten dollars*, and that of the mature man, already established, with his millions in bank. In short, the delusive thesis of English financial science, artfully presented, and not very often analyzed, misleads the American people beyond measure, and not unfrequently to oppose their own best interests. England is largely a creditor nation. She sometimes lends a helping hand to other nations, and lifts them temporarily out of financial strait, and with sweet patience waits her own time, and studies her opportunity when, for her own ends, she may let them drop heavily.

The demonetizing of silver, and the efforts which England put forth to carry the scheme through the Congress of the United States, may be considered the heaviest financial *drop* she has administered to her debtor nations during the period of her national existence.

It was a scheme, intended not only to affect the value of national securities, but also to deprive each debtor nation of one-half of its monetary resources for payment.

One thousand millions of United States bonds held by England, was something for England, if she could insure their payment, principal and interest, in gold. It would place this Government, financially, at the mercy of the merciless. England could propose to us, as she did once to Spain, that she would modify the terms of her monetary exactions on condition that we opened our ports to her manufactured productions, which, once done, would bind this nation in the payment of tribute to her forever. The control of the silver production of the United States, to be wholly manipulated by England, became a tempting financial item.

Our gold production being inadequate to the demand on us for interest alone—all mortgaged to England—and although doubled in the power of its purchase, would pay no more of our debts than before the demonetizing of silver, the situation would become distressing to us and profitable to them. Our silver bullion, our grain, our cotton, our wool, our wine, and all other things necessary to English life, production, and trade, must naturally find a market and a price such as our crippled condition would enforce and English rapacity reluctantly see fit to give.

This much as a financial achievement, but *not all* of the programme.

This nation, shorn of one-half of its monetary supply, its credit impaired, and its natural

life and activities paralyzed, would leave England master of the situation, and make English supremacy secure for another century.

If it were possible for this nation to exist after being drawn into the continuance of a scheme so calamitous to our peace and prosperity, the maintenance of it would scarcely repay the effort.

Certainly, other debtor nations, whose resources and productions are less than ours, have great need to look about them, lest they find existence a difficult condition to maintain.

Is it necessary to go into details of all the minor causes which induced England and Germany to demonetize silver? If so, it can be done; but the thought that these essays should be condensed, and that it is not always good policy to exhaust a subject, leaves me to conclude with the suggestions that the policy of England is especially calculated to advance the interests of England, regardless of consequences to other nations; that a financial contest has been waged against the United States ever since the establishment of this Government; that England has drained this people of their money as fast as it has been accumulated, and still holds them, as well as this Government, largely in its debt; that this condition would have been avoided had this nation been guided by a wise and true policy of its own; and that it is quite time for us to inaugurate a political system which shall be distinctive in its features of protection of American interests, open a wider field for industrial employment, and thoroughly fortify this Government against the machinations of all foreign powers.

CONGRESSIONAL REGARD FOR ENGLISH INTERESTS.

We would like the good opinion of the world, if it be not too expensive.

We do not believe that a *good opinion of us*, purchased at a cost of three hundred millions of dollars, is available to us for any sum whatever. It is generally understood that a nation employing a policy which serves its own with the highest benefit is enabled to command the respectful consideration of other nations, and that a nation that truckles to any other loses caste abroad and forfeits the confidence of its subjects at home.

The Government of England originates and adopts such policy internally and externally as serves with best effect to advance the interests of its own, and this without consulting the wishes or pecuniary interests of any other nation. The same may be said of France and Germany and other continental nations. But, the United States, ever without a true national policy, defers to other powers when a policy is proposed for it, and her statesmen ask: "What effect will it have upon England," etc., as though we were still subject to her imperious guidance, and as though they were lost in the troublesome mazes of doubt as to whether we were a nation striking for national life and existence, or a simple dependence of that voracious and far-reaching power.

Legislation on our part which contemplates the least surrender of what rightfully belongs to us is unworthy of us as a nation.

Instance the discussion in Congress upon the dual standard at its last session. When there arose men of acknowledged ability who opposed the measure simply because England held a large part of our bonded indebtedness, upon which it was expressly stipulated that the interest should be paid in coin—not gold coin alone, nor silver coin alone, but coin of the United States, and thereat urged that silver coin, which was a part of our money at the time of issue and contraction of the debt or the bond, and known to be so by the whole world, should be effectually demonetized; and who carried their argument so far from home, and so near to English interest as to declare that the whole bonded debt should of right be paid in "gold coin," and this, too, in the face of the saddest condition in our monetary affairs. The known fact that of gold and silver, combined, annually produced in the country there would not be found a sufficiency to pay the interest alone, and that if *their will* were to become the law, our entire annual production of gold would only pay about one-fourth of the interest annually falling due, and that the burden of our national indebtedness alone would be more than the nation could bear.

It would appear that foreign bondholders have most willing allies in the Congress of the United States, far more ready to serve a foreign interest than the interest of the nation and constituency they were sent there to represent.

The honor of the nation will stand unsullied if it pays in the moneys it promised, and this proposition, to pay our debts in gold and silver coin (whichever may be most convenient) may be maintained with far more honor and dignity than to yield to the demand for gold, and thereby largely increase her bonded debt, by the sale of bonds for gold, to meet the annually accruing interest.

It is significant of the character of our representatives, when we observe of some of them how strenuously they contend for a *decrease of our non-interest-paying debt*, and advocate an *increase of our interest-paying debt*.

If our people are apprehensive that we would be flooded with silver from England and Germany, in case we remonetize silver, we may find some comfort in the purchase of what we need beyond our production, at a discount upon its value, to coin into dollars, and pay it back to them as coin of the "United States," for any debts we may be called upon to discharge to the people of those countries. With forty million people, we can absorb four hundred millions of this silver money, and not feel it a heavy burden; and we can say to other nations that we like it well, and propose to pay our debts with it like christian people, and the sum of our debt is so considerable that the silver production of the world will not furnish us the needed sum.

We are mistaken if this policy, followed vigorously by us for a time, did not find England and Germany pressed into a remonetization of it, by their own people.

MISAPPREHENSIONS.

A misapprehension may be mentioned, and it is widespread—from Alaska to Florida: "That the supply of money doubled, would double the prices of commodities." The late rebellion occasioned a great advance in the price of commodities and properties, and these prices were attained before the increased issue of the national greenback currency. The issue of greenbacks had nothing to do with the advance in prices. On the contrary, the increase in the supply of money stimulated production, and reduced prices by competition. England, France, and Germany, denser populations than the United States, with more money, *per capita*, and larger accumulations, find employment for their laboring arms at less per day than we, and deliver to us their productions at less cost than we can produce the same articles, while the cost of living in those countries is less than in the United States.

Are there any who can cry out against inflation in England, Germany, and France?

Are there any who can deny that these nations have much more money, *per capita*, than we have?

Are there any who deny that the rate of interest in these countries is less than in the United States?

Does not this alone prove a more liberal supply of money?

They who declare that to double our money would double our property values, forget themselves, and lose sight of one important consideration, to wit: That a generous supply of money to a people stimulates them into activity, and activity means increased enterprises, and increased enterprises means competition, and competition means production at the lowest living rate, and production at the lowest living rate means a fair fight to supply the world, just as England has been doing by furnishing to her producing classes, money at three per cent. per annum for more than a hundred years, and grown to be the greatest manufacturing nation on the globe.

The money of a nation is the symbol of its power, the measure of its wealth, the vitalizing, circulating medium which, like the blood in human organisms, builds upon the bone and strengthens the tissues.

Is it wise for a nation to put a limit upon its power, or to retard its possible achievements? Can a people have too much strength, too much prosperity, too much honorable and happy employment? Shall not the nation be constant to itself?

STOP THE MONEY DRAIN.

The general productiveness of the domestic industry of a country, depending, as it does, upon the general efficiency of its laboring arms, is a matter which concerns the State; inasmuch that, if industry be not encouraged, upheld, and stimulated, it will not become generally efficient; or, if efficient, and unsupported by friendly legislation, will cease to remain so.

The labor of England is kept in a higher degree of efficiency than in any other country, because of the wise policy of England, first, in the provision of money at a low rate of interest, and second, the masterly activity of the Government to provide markets for her productions.

What England lacks in natural resources and supply is more than compensated by the activity of her people, the wisdom of her legislature, and the diplomacy of her statesmen. A condition of superior natural productiveness should be esteemed the most important adjunct to national success.

This the United States possess in an eminent degree. The condition which enables a people to purchase the raw material and turn it into superior manufactures, is attained by consummate study and the most rigorous appliances of art. This is the status of which England proudly boasts.

The latter condition is the result of the operations of mind over matter. The first is the condition incident to prolific natural productions, depending more upon the employment of muscle than mind.

What we import from other countries is not inspired by any tactics of mutuality in the exchange of commodities, and never should be, since the true science of government disallows it. In England it may be so, because English imports are of a character which only a more favored country can produce.

Such is not the case with our own country. We, for instance, sell our wool and cotton, and largely import the cloth and fabrics into which it is made, virtually admitting that England is the more favored country for manufacture, while we are the more favored in producing the raw material. It is for men of reflection in our country to determine if it be a necessary, prudent, or wise policy for us to circumscribe or limit our industrial energies to a simple production of the raw materials, instead of diversifying our employments, and accomplishing for ourselves what we have too long paid other nations to do for us.

England has set us an example which we have been too slow to follow. As early as 1749 England had reduced the rate of interest on loans to three (3) per cent. per annum. At that early period the Government had ascertained that the profits upon her manufactured productions enriched the nation much more rapidly than the loan of money at a higher rate of interest, and it is only necessary to read the statistics showing the increase of her manufactured productions to come to an understanding of the means by which she arrived at her present commercial

supremacy. I refer to the policy of England, as often as I have done, that my countrymen may be enabled to observe the utter insufficiency of the policy of our own Government, and to furnish an intimation of the course which we will be called upon to adopt, or admit our incapacity for self-government.

It may be charged, by the inconsiderate, that I lay too much stress upon the evils of importations, and perhaps some may oppose the measures recommended, because they would have so absolute a tendency to check them.

Men may point to the difference in our international exchanges, and say the sum is not marvelously large—not more than one hundred millions per annum! To which a sufficient reply may be given in stating that one hundred million dollars per annum—which, under our present system of doing business, is much more likely to increase than to diminish—is a sum of itself sufficient to sink the nation, if continued, in twenty (20) years. The prospect would be quite dark enough if we were confined to this difference of exchange; but that is not the most alarming part of the account. If we take into consideration the fact that the sum named is about double the sum of our production of the precious metals, we may readily perceive that, with that drain alone, the nation would be impoverished rapidly.

When we add sixty (60) millions interest, annually, to be discharged on our bonds in foreign hands, one hundred (100) millions interest and principal of our railroad securities, and another one hundred (100) millions, spent by our itinerant pilgrims to the *Holy Land*, and other interesting etceteras, the reflection is not amiss, if we strike for a reduction at the first-named sum, and continue our vigorous blows until we have routed the whole line.

That the English nation has been able to achieve so much of what makes a nation strong, thrifty, and dominant, under circumstances widely varying from us in natural productions, presents to us a lesson of incalculable importance, if there be spirit enough left in the people to profit by it.

Descendants of the same race—intelligent, inventive, energetic, and naturally ambitious—we may well question the causes which have so potently opposed our progress, and undermined the financial status of the nation.

To briefly summarize these causes, I may state that England's advantage is wrought from cheap labor, low rate of interest on money extensively employed in manufactures, cheap transportation, large monetary accommodation, and an internal and external policy consecrated to the service of English aggrandizement; whilst our own nation may be charged with entertaining a high appreciation of credit, an ambition to surpass the world in railroad construction, the maintenance of a high rate of interest, and consequent difficulty of engaging capital in manufactures; inadequate transportation; extravagant fondness for foreign toys; a policy which contemplates the elevation to place and position of individuals, rather than the advancement of the common interest; an indifferent monetary provision, unsupported by any principle or system of control; and a Congressional legislation seemingly uninspired by those lofty purposes which distinguish true statesmanship.

BRIEF SYNOPSIS OF A MONETARY SYSTEM.

When silver shall be fully remonetized by Congress, I will submit, through some Representative in that body, a carefully prepared monetary system, comprising the following essential provisions:

1st. The requirement that the entire gold and silver production of the country shall be coined into money of the United States, and that no part of our bullion product shall be permitted to leave the country.

2d. That the quantitative relation of gold and silver be determined by a standard adjusted with especial reference to the support of these two metals for monetary uses, as well as to make gold coin less desirable for export.

3d. That gold shall not be coined in pieces of less denominations of value than five dollars.

4th. That silver be coined principally into *dollars* of 412½ grains, the same as before demonetized, with fractions of "halves," "twenty cent," and "ten cent" pieces, and that a composite of nickel and other metals shall be used for lesser coins.

5th. That the nation shall issue, and be the source of, a *one only paper money*, in bills not less than five dollars legal tender, and possessed of all the functions of use which attach to the coined money of the nation, and to be an absolute equivalent of coined money.

6th. That the Government take upon itself the issue, regulation, and entire control of all of its monetary creations, and sever its connection with all banking institutions, and all private corporations.

7th. That the Treasury and Sub-Treasuries of the United States shall become the depositories of the gold and silver bullion product of the country, and the dispensing and issuing agencies of the money of the Government.

SAN FRANCISCO, December, 1876.

SILVER REMONETIZATION.

Speech of Col. H. S. Fitch before the National Labor Party.

An Eloquent and Convincing Argument—Need for more Money—Reasons Why Remonetization is Asked for—Unrestricted Coinage a Necessity—List of Resolutions Adopted.

At a meeting of the State Executive Committee of the National Labor party, held Thursday evening, the following resolutions were offered by Colonel Henry S. Fitch:

1st. *Resolved*, That the National Labor party of California, through its State Executive Committee, declares its approval of the efforts of Hon. J. P. Jones and other members in the Congress of the United States to effect a full remonetization of silver.

2d. *Resolved*, That all coinage of silver should be made by law a full and unlimited legal tender, and that there should be no lawful limitation or restriction of the sum that may be coined.

3d. *Resolved*, That the silver dollar shall contain 412½ grains of silver, of the American standard of fineness, and that silver coins of less value and denomination shall contain proportionate bullion value.

4th. *Resolved*, That the coinage capacity of the Mints of the United States should be increased to an extent that shall enable the Government to coin the entire annual production of the precious metals.

5th. *Resolved*, That every citizen of the United States should enjoy an equal advantage and facility in the conversion of bullion of silver and gold into coin through the national mints, and that the seigniorage and costs of such coinage should be restored to the government by law and fixed at a rate which shall cover the annual expenditure of the several mints of the nation.

COLONEL FITCH'S REMARKS.

Colonel Fitch addressed the committee in support of the foregoing resolutions as follows:

Mr. Chairman and Members of the State Executive Committee: I will not attempt at this time to present an exhaustive argument upon the subject of remonetizing silver, although I deem it one of the most important that can come before the American people for their consideration. The measure has some powerful and noble advocates in the Congress of the United States, and I deem it only necessary to present a concise and condensed statement of the views upon that great question entertained by men in this body who are prepared to sink all personal or local considerations in a discussion of a measure so important to the whole nation. Senator Jones has stood by this silver question and presented it in its various aspects with marked ability. He has discussed this question from a national standpoint, and not as a producer of the silver metal; and he, with those who stand upon the side of silver, do wisely for their country. In the contest soon to be had in Congress upon this subject it seems meet and proper that, while Eastern cities are giving expression of their support and favor to the bill for remonetization, the Pacific slope, and especially

SAN FRANCISCO, SHOULD NOT REMAIN SILENT.

Mr. Chairman: I need not state to you that, for eighty years preceding 1873, silver and gold had occupied in our national monetary provision a standard relation to each other, fixed upon a basis of 1 to 16. There never was shown during that period the least antagonism or conscious preference for one over the other. And it is somewhat of a revelation to us to arrive at an understanding of the cause or causes which underlie the demonetization of silver, and the consequent elevation of gold as a single standard for the money of the country. We have had in circulation gold and silver money, and, since 1861, a very excellent substitute known as Treasury notes. The interests of the country seemed prosperous until contraction of the greenback began under the remarkable statesmanship of Mr. McCulloch. No man among the enterprising or the toilers of the land asked the Government to contract its money volume, yet it has been fearfully contracted. When greenbacks and other paper substitutes for money had been reduced to about one-third of their volume, and the country had pleaded with President Grant and his merciless Secretary of the Treasury to stop any further withdrawal of the currency from circulation, it would seem that the Government must have understood that the people

DESIRED MORE MONEY, AND NOT LESS.

But the Government did not heed the demands nor the distresses of the people, and we feel like asking for a reason why the people's petitions were not heard. Governments of the people are supposed to respond to the wishes and interests of the people. How is it that this Republican Government ignored all claim of the toiling masses, and would not listen to the wail of distress that for years and years has been heard all over the country? Had the people not put down the rebellion with their treasure and their blood? Were not these, who sacrificed so much to maintain the Government, true to it? Why, then, was not the Government true to them? Why was it that measures of contraction were enforced unasked by the people? Why was it that the country awoke in 1874 to the discovery that Congress had demonetized the silver dollar in 1873, and enforced the future dependence of the country on gold as the only legal

money of the nation? Was it so abundant that a single standard of gold appeared practicable? Was it an act which the people desired? Did the country urge upon Congress this measure? I answer, no! emphatically. Then how was so mischievous a scheme carried through the Congress of the United States? I will tell you my opinion about it, and if my opinion does not suit you, because insufficiently explained, read what shall hereafter be said upon the question, if President Hayes dares to veto the bill to remonetize silver. We have, unfortunately, a power in the country greater than the Government! This power was always and is now inimical to the Government, and desires the subjugation of the people. It was begotten by the folly of the Government. It is

THE VICIOUS CHILD OF AVARICE

And governmental franchises and subsidies and large scheming, with little or no honesty to show it up. It was the Anglo-American gold and bond ring—a power that will overthrow all governments that do not overthrow it. It is an established power that never waits for the people to ask for the passage of a law. It seeks only to know that a law is necessary to the success of its schemes, and the means are furnished to make its passage secure. This is the power that has changed our non-interest bearing currency into interest-bearing bonds, this is the power that demands resumption, and this is the power that sought to paralyze the Government in that effort by the demonetization of silver.

If these powers have become so potent in the legislation of the country as to control it in their own interest, as they have done for the last sixteen years, what are we to expect of it now? With the President of the United States, and his Secretary of the Treasury, and his other Cabinet officers standing boldly against the public welfare and the will of the people, it would seem that the money powers "had made their election sure." Were it not for the appearance of a clear majority in both Houses of Congress in favor of remonetization of silver, we might well despair of securing any legislation in the interests of a patient and suffering people. In some degree encouraged by observing that this question of money is becoming better understood, and in the hope of adding something upon this great question which shall lighten the labor of its friends, I will state some of the reasons

WHY REMONETIZATION IS ASKED FOR.

The neglect to sustain silver in demand for monetary use must necessarily paralyze this nationally important industry, and close to the labor and enterprise of the country a broad and most valuable field of employment. To keep this field open forever to the laboring arms of our country is a question reaching beyond the measure of metal that may be obtained. It is a matter which the philanthropist and the statesman are called upon to consider, and unprincipled greed must go down before it. The national credit abroad does not demand that it shall be ignored. The national credit at home is nearly related to it, and I feel like declaring that a government which is strong at home is far more likely to command respect abroad, and that is all that a nation with any dignity left to it should seek under any circumstances. The mistake which this government has made seems to be that it craves a credit abroad and not respect, and the sooner a reverse of purpose takes place the better it will be for the country. The remonetization of silver is

NO SCHEME TO OVERREACH ANY ONE.

It is a demand of the people to have restored to them that of which they were fraudulently deprived by legislation instigated by an Anglo-American conspiracy. It means the reconstruction of one of the two great arms of national protection and defense, which had been surreptitiously stricken from the body politic. It means the utilization of American resources in response to American needs.

The people demand the remonetization of silver because it is one of the natural resources of the nation—one of the productions of American skill and labor, and as a resource of the nation should be utilized in its highest form of service.

They demand remonetization of silver because the support of this metal for monetary use forms, in general measure, the inducement for search after gold—with which it is generally found associated.

They demand remonetization of silver because it will double our metallic money supply, and supplement the volume as far as the production of this metal shall admit of.

They demand the remonetization of silver because we are largely a debtor nation, and it is our duty to utilize silver in all coin payments contracted for by the people and by the government.

Remonetization of silver is demanded because it is an important and essential step in the direction of the establishment of a monetary system, by this government, which shall put an end to further monetary vicissitudes, and which will secure to the United States the control of not only the silver, but the gold of the civilized world.

Remonetization of silver is demanded because, to the extent of its coinage, it will operate to

PREVENT THE EXPORT OF GOLD.

Remonetization is urged because the United States can distribute \$500,000,000 of it at home, without inconvenience to its citizens.

Remonetization of silver is asked for, because it is the natural money of the laboring

classes, and it should be distributed to them, of a quality for use and payment equal to the best that can be coined.

It is asked for, because it belongs to the United States to meet a blow intended to cripple its resources, and to make this country henceforth dependent upon the British Government for its money supply; and it is high time that our Government asserted some of the powers which belong to it.

Remonetization is asked as the simplest amendment of the fraud of demonetization, stealthily carried through Congress without the least justification or notice to the people.

Remonetization is asked, because it is a scandalous waste of good material for money, if further permitted to be manipulated by England as bullion.

Remonetization of silver is asked, because it adds to the possibility of resumption within the ensuing decade.

Remonetization is urged, because the payment of interest was contracted to be made in "coin"—payment in gold alone is inequitable, extortionate, and impossible.

Remonetization of silver is necessary, that the value of the two metals—gold and silver—shall continue a co-relation which has rested for centuries, and with which the people are satisfied.

REMONETIZATION OF SILVER IS NECESSARY,

because all debts that have been contracted in our country were measured by the aggregate of gold and silver coin, and not by the sum of gold coin alone.

These debts were created under the double standard, and not the single standard. We ask the remonetization of silver, because we desire to discover who were in the plot to demonetize it, and who, by treason and by shameful purchase, opposed the

BILL TO REMONETIZE IT.

Remonetization of silver by the United States will neutralize the effect of German demonetization, and with two more acts of our Government, to be considered hereafter, will bring all Europe to beseech a convention and yield to any terms of general monetization of silver we may ask.

What these acts shall be enters not as a part of the question of remonetization. They follow it, and will develop their potential powers as soon as they shall be named. We ask that the law of silver coinage shall be so changed that no more quarters shall be coined, and that the fractional coins shall be of denominations of a multiple of ten, in accordance with our decimal system, to wit: 10, 20, and 50-cent and dollar pieces, and that these coins shall be money—a legal tender in any sum of payment. It is reasonable that, if twenty men are allowed to make payment of these fractional coins to one man in sums of \$5 each, he who receives them shall be permitted to pay them out again, without loss or hindrance of law. Indeed, a governmental limitation of the sum of coin which may be made in any one payment may be regarded as a lively and most vexatious fraud upon the people, and a disgraceful act on the part of the government.

THESE ARE SOME OF THE REASONS

why remonetization of silver is asked. I now propose to add to the reflections already given to this body my views upon the laws under which money must be coined to make it money. The creation of money presupposes its endowment with certain functions:

First. Money must be a legal tender, that contracts may be adjusted and debts discharged.

Second. It must possess unchanging value, that it may be a proper and fixed representative of wealth.

Third. It must be an immutable measure by which the computation of sums and payments may be determined.

Fourth. It must be interchangeable without loss for the accommodation of the public use.

Fifth. It must be made, by the highest authority, an absolute equivalent, to merit public confidence.

These functions and properties of money must be understood, or otherwise the Government will find difficulty in regulating it.

THE "PURCHASING POWER OF MONEY"

Cannot properly enter into any consideration touching the law of its creation. It has nothing to do with it. Yet it has misled the most famous writers upon monetary finance. Money must not possess one value to-day and another value to-morrow, and the metals of which coined money is made must possess an equal stability of value. This stability of value of metals can only be obtained by full and unrestricted monetization of them.

It is only when the coinage of the one or the other is discontinued or restricted by law, or shorn of its legal tender power, that the metal so withdrawn from demand is lessened in value. Neither the cost of commodities, nor the voice of man, nor the debts of the nations, nor the constricted properties of the world have any part in the adjustment or determination of the value of gold and silver. Gold and silver are simply the productions of the earth, by long and general consent utilized and chiefly employed for monetary uses, and thereby wrested from the contingencies of trade and barter, while in demand for monetary use. There cannot be any change in the value of gold and silver, so long as governments hold to the unrestricted use of

coin made of these metals for a circulating medium, save and except when less or more metal is put into the coinage of a country without change of the nominal or representative value of the coin. Were silver to be remonetized, and gold and silver to continue to be metals for coinage without limit or restriction, the value thereof cannot be changed except as I have stated, by an increase or diminution of the amount of metal put into each coin.

COIN NOT POSSESSING FULL LEGAL-TENDER POWER

Cannot be money; and without the fixed status which the legal tender, and unrestricted coinage, presupposes, it ceases to be a measure of value.

Monetization of silver is understood to be the legal conversion of silver into money. That cannot be money which can be legally refused in payment of a debt. It follows, therefore, that money must be lawful, secure, and a legal tender without limit, otherwise it cannot be money. Silver coin cannot be money if it be made subordinate to gold coin. Silver money must be the equivalent in law, and in all the powers of its use, with gold money; and if this quality cannot be given to silver money, remonetization of silver becomes a misnomer and a cheat. With a few words, explanatory of the necessity of coining silver without any restriction whatever touching the quantity that may be coined, and I have done. I have intimated that the standard of money must be unquestioned, its value and power undisputed, and its acceptance and usefulness unbridged by any limitations or restrictions whatever. It will not do for this Government to establish a standard for silver money, without proper provision for the maintenance of its status. Suppose, for instance, that the Government monetizes silver by a law that shall permit of the coinage of only \$5,000,000 per annum; it would fix by law the standard of silver—that is to say, 412½ grains to the dollar—900 fine, with the Government stamp of “one dollar.” This would be the standard of the silver dollar. But this action alone would not suitably support the standard; on the contrary, such a law for the remonetization of silver

WOULD BE FOLLOWED BY A DISASTROUS DECLINE

In the bullion value of silver, which would soon infract the coin value. But if the Government enact a law for the remonetization of silver which shall permit of the coinage of *all that metal which shall be presented for coinage*, the value of the bullion of silver would become fixed and stated by the sum of dollars it was capable of being coined into, less the cost of conversion and the seigniorage of the Government. This done, and silver, whether bullion or coin, would become established in a one unvarying value, and hold to it as inflexibly as gold.

A further explanation may be given, in supposing that, with \$5,000,000 a year demand for silver for coinage, the price of silver would be enhanced above the price it would command without this requisition; but with this only demand for coinage, there would fall upon the market for sale for other uses, say \$30,000,000 per annum. Partial remonetization would not support the value of the \$30,000,000 uncalled for, therefore, silver would be left to the mercy of the market, and never being worth as much for uses in the arts (except when there exists a demand for all of it for coinage), it

WOULD CONTINUALLY FLUCTUATE,

And become subject to all the vicissitudes of property. But with a demand for silver for coinage which shall embrace the *entire production* of that metal, its value would become fixed as the metal of gold, and occupy a status of intrinsic stability which metals can only attain to by a law for unlimited and unrestricted use for coinage. This demand for all that could be produced for coinage, would make money of this metal as sensible a representative of value as can be conceived of, and would put an end at once to British scheming for the control of our gold and silver bullion.

With this explanation of the necessity for unrestricted coinage of silver, it leaves me to conclude with the expression of the hope that silver shall be remonetized without any limitation of its power of use, or restriction of the quantity that may be coined; for surely it will not be money if one dollar and its multiple in any and all payments can be legally refused.

LET THERE BE NO COMPROMISES

Upon this silver question. Silver coin cannot be money if it be made subordinate to gold coin; and the friends of silver remonetization in Congress must not yield to any trick of the gold and bond ring of a limiting or restricting character.

THE SILVER DOLLAR.

The Absurdity of Limiting its Legal Tender Power.

President Hayes' Position on the Silver Question—We should Legislate for Our Own Country, and not for Foreign Nations.

Letter of Col. H. S. Fitch, taken from the San Francisco Chronicle.

The President recommends the addition of the silver dollar to the coins authorized by law, with a “limited legal tender power” and a “proper restriction” of the sum which shall be coined.

This may be regarded as a two-edged proposition to prevent the remonetization of silver. Seemingly, the President is in favor of restoring the silver dollar; but, upon examination of his recommendation, it will be plain enough to thinking minds that he stands with Sherman, McCulloch, and the bond ring, and don't mean remonetization at all. Let us tear this thin veil from before the eyes of those who mistake the Presidential utterings for wise and prudent suggestions.

First. The President should know that there was no limitation of the legal tender power of the dollar of our fathers.

Second. He should know that there was no law restricting the sum of silver coinage.

Third. His Excellency should know that any limitations of power or restriction whatever put upon silver coin, which is not put upon gold coin, infracts the law making it equivalent for gold, and that such coinage would not be like the coin demonetized—the old dollar—which was a full legal tender.

Fourth. That any law authorizing the coinage of silver into money, which changes the value of the silver dollar from what it was before it was demonetized, renders such coin of no avail in the payment of contracts made previous to the time of demonetizing the old dollar.

Fifth. The President of the United States is doubtless a debtor, for these singular propositions, to John Sherman, Secretary of the Treasury, who ignores all law upon this great question.

Permit me, Mr. Editor, to present what seems to me

A COMMON SENSE VIEW OF THIS SUBJECT.

First. It is proposed to coin silver—into what, if not into money? Does remonetization mean anything else? If it does, we had better coin a new word which shall be better understood.

Second. When two metals of different value are monetized by coinage, what is required to be done? Adjust the quantitative relation of the two metals, of course, and then make each into money. Money is the measure of a value fixed by law—not depending upon the materials of which it is made. It must be lawful, secure, and a legal tender. The legal tender power of money, of different materials, makes it coequal in service, and consequently equivalent, one kind for the other. Not having this power, it cannot be money, and any issue so made is but a substitute and a fraud in its very nature. Does the President propose to continue these fraudulent transactions?

Again, if the President will take the trouble to examine further he will find that the Government may declare sixteen pounds of silver shall be the equivalent of one pound of gold; but that the Government even cannot perpetuate that relation by any device whatever, except by full, unrestricted and

UNLIMITED MONETIZATION

Of the two metals. These metals employed for monetary purposes *must* be raised above the contingencies of a commodity; and the relation which each bears to the other can only be maintained and the coinage of each kept up to its full monetary measure, by a law which establishes their perfect equality in the field of use. Is it possible that the President does not know the effect of limiting the powers of a tender? Is he not aware that any limitation or restriction in the law creating a monetary medium, deprives the issue of its fixed money value? Does he not comprehend the fact that any impediment to its use is practically a demonetization of it? Why then this recommendation of the President?

WHY NOT COME OUT SQUARELY

Against the coinage of silver for use as money? Does he suppose the people so ignorant and desperately stupid that they cannot see through the sham—the trick—which his recommendation involves?

Again, I would ask, for whom does he propose this limited tender silver coin? He intimates that it would facilitate resumption. What! The government to coin simple bits of silver into small tokens—valuable and marketable only by weight—a scoured commodity, the price of which would be daily quoted from the London Stock Board? This commodity to be utilized in the work of resumption of specie payments? Who does the President suppose so stupid as to admit such an issue to the claim of specie? What kind of a redemption of the government notes would that kind of coin imply? Would not repudiation of these government notes be vastly more honorable? There is supposed to be about \$350,000,000 in greenbacks in circulation and about the same sum in national bank notes.

IF RESUMPTION MEANS ANYTHING,

It means the cancellation of these vast sums. What, then, does the President mean by "proper restriction of the coinage of silver?"

Surely, the holders of these notes must be hard pressed indeed to give up the greenback substitutes for money (as they are because of their limited legal tender), which passes in *any sum* for nearly all payments, and receive a coin in exchange therefor, which, because of more detrimental limitations, could not answer to their use as well, and which, because of a restriction in sum that might be coined, should answer to no support of its bullion value.

Are not the citizens of the United States ready to declare against legislation of such a

character, and against a Machiavellian administration so pernicious. There is but one course to pursue properly: That is to coin all the silver bullion that can be obtained into money.

LEGISLATE FOR OUR OWN COUNTRY,

And not for England. Permit no more commodity money or questionable substitute for money to be issued either through the Government or through banks. Make all monetary creations good for what their face implies. Have in circulation only the money of the Government of the United States. Endow the various kinds with equal power of purchase and of payment, and exchangeability will follow as a consequence that cannot be questioned. Is it proper to attempt to restrict the sum of a monetary supply for a nation? Shall we say that the United States shall be restricted to the accumulation of a given sum, and that the people must stop further accumulations? How ridiculous the question. Yet restriction of the sum is advocated by the President and his sapient Secretary of the Treasury (if it be made of silver) with the seriousness of men who really believed that a people could become too prosperous and accumulate too much of wealth in money.

Has the President to be instructed upon these questions? Has he not considered the potentiality of the words "legal tender" as applied to money?

Does he not know, that in all the history of legislation upon the globe, no instance is shown of a limitation of the legal tender power of money (coin or paper) which did not destroy it for monetary use? The substance, then, of the President's recommendation, is to

MONETIZE THE SILVER COIN AND THEN DEMONETIZE IT

By tacking upon the law limitations and restrictions which shall make it useless to the people. Is it not significant of the President's allegiance with money powers, and his complicity in the nefarious schemes to contract the money volume of the nation, whereby, not only the money, but also a vast proportion of the property of the country may become concentrated in the hands of an arrogant, oppressive, oligarchic few? The proposition of the President relating either to "silver" or "resumption," cannot possibly be sustained by any common-sense logic from whatever source.

Permit me to call the attention of thinking men to the position I have herein taken concerning this question of monetizing silver, and to challenge Secretary Sherman or any other man in England or America to a refutation of the simple propositions I have made.

Respectfully,

HENRY S. FITCH.

San Francisco, December 6, 1877.

THE SILVER BILL.

Correspondence in relation to the Silver Bill, which lately became a law:

SAN FRANCISCO, February 16th, 1878.

Col. Henry S. Fitch—Dear Sir: Enclosed find Silver Bill, as it has just passed the United States Senate. If not too much occupied, would be glad to have your views of it, to be presented and read before the State Executive Committee of the National Labor Party of California.

Very Respectfully,

A. B. PAUL,

Chairman State Ex. Committee.

FULL TEXT OF THE SILVER BILL.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

Section 1. That there shall be coined at the several mints of the United States, silver dollars of the weight of $412\frac{1}{2}$ grains Troy, of standard silver, as provided in the Act of January 18, 1837, on which shall be the devices and superscriptions provided by said Act, which coin, together with all silver dollars heretofore coined by the United States, of like weight and fineness, shall be a legal tender at their nominal value for all debts and dues, public and private, except where otherwise expressed and stipulated in the contract; and the Secretary of the Treasury is authorized and directed to purchase from time to time silver bullion, at the market price thereof, not less than \$2,000,000 worth per month, nor more than \$4,000,000 per month, and cause the same to be coined monthly, as fast as so purchased, into dollars; and a sum sufficient to carry out the foregoing provisions of this Act is hereby appropriated out of any money in the Treasury not otherwise appropriated; and any gain or seignorage arising from this coinage shall be accounted for, and paid into the Treasury as provided under existing laws relative to the subsidiary coinage; provided that the amount of money at any one time invested in such silver bullion, exclusive of such resulting coin, shall not exceed \$5,000,000; and provided further, that nothing in this Act shall be construed to authorize the payment in silver of certificates of deposit issued under the provisions of section 254 of the Revised Statutes.

Sec. 2. All Acts and parts of Acts inconsistent with the provisions of this Act are hereby repealed.

Sec. 3. That, immediately after the passage of this Act, the President shall invite the governments of the countries composing the Latin Union, so called, and such other European

nations as he may deem advisable, to join the United States in a conference, to adopt a common ratio between gold and silver, for the purpose of establishing internationally the use of bi-metallic money, and securing a fixity of relative value between these metals. Such conference to be held at such place in Europe or in the United States, at some time within six months, as may be mutually agreed upon by the Executives of the governments so invited, or when any three of them shall have signified their willingness to unite in the same. The President shall, by and with the advice and consent of the Senate, appoint three Commissioners, who shall attend such conference on behalf of the United States, and shall report the doings thereof to the President, who shall transmit the same to Congress. The said Commissioners shall receive the sum of \$2,500, and their reasonable expenses, to be approved by the Secretary of State. The amount necessary to pay such compensation and expenses, is hereby appropriated out of any money in the Treasury not otherwise appropriated.

SEC. 4. That any holder of coin authorized by this Act may deposit the same with the Treasurer or any Assistant Treasurer of the United States, in sums not less than \$10, and receive therefor certificates of not less than \$10 each, corresponding with the denominations of United States notes. The coin deposited for or representing the certificates shall be retained in the Treasury for the payment of the same on demand. The said certificates shall be receivable for customs, taxes, and all public dues, and when so received, may be re-issued.

CHAIRMAN STATE EXECUTIVE COMMITTEE, }
NATIONAL LABOR PARTY. }

Dear Sir:—Your note, inclosing text of Silver Bill is received. I have to answer, that it is *one short step*, but not a bold and far-reaching stride in the direction of what is required to be done to make silver coin the equivalent of gold coin.

1st. The words, "except where otherwise expressed and stipulated in the contract," in Section 1, were better out of the bill, because they invite the opponents of silver to specify gold payments in contracts of agreement whenever possible. Silver coin, a full legal tender money, made to occupy a corollation to gold coin, becomes thereby barred from use in a wide field where contracts may be resorted to.

2nd. The clause in the same section, "authorizing the Secretary of the Treasury to purchase from time to time silver bullion, at the market price," could have been improved, by permission of free coinage, and by permission to deposit bullion in the mints and sub-treasuries of the Government and to draw in exchange for it the value, less the cost of coinage, in full legal tender greenback money.

The words "not otherwise appropriated," may be found to occupy an unfortunate place in the bill, if Mr. Sherman's indifference shall fail to find an unappropriated balance in the treasury.

The proviso, concluding the section, "that nothing in this Act shall be construed to authorize the payment in silver, of certificates of deposit issued under the provisions of section 254 of the Revised Statutes," means something that restricts the use of silver. Not having the statute referred to at hand, I cannot show to what extent that restriction may reach.

Section 3 of the bill before me says: "that immediately after the passage of this Act, the President shall invite the governments of other countries, composing the Latin Union, and such other European nations as he may deem advisable, to join a conference, to adopt a common ratio between gold and silver, for the purpose of establishing internationally the use of a bi-metallic money, and securing a fixity of relative value between these metals."

I believe it exceedingly unwise to ask for such a conference, in the very bill which monetizes silver.

It is as much as to declare that we are ready, if foreign powers recommend it, to "take down our flag," and to follow their suggestions. It discloses a truckling subserviency to foreign ideas, and a weak resolution to stand by the interests of our own country.

4th. Of section 4 I have to say—the permission to deposit silver coin and draw Treasury certificates therefor, will doubtless result in much convenience to those who deal in large amounts of silver, and for that service is to be commended. But these certificates are a "promise to pay," or *redeemable* in silver coin, and while they are made a legal tender, they *are not money*. This device continues the method and practice of making a distinction in money, and until the people shall better understand this question, will prevent the creation and issue of an absolute paper money. Had Congress enacted a law making a paper money, not dependent upon redemption in one, or any kind of money, it would have the place of the certificates, for either gold or silver, and nothing could arise to make one kind of money preferred to another, except in the matter of convenience of handling, and this improved paper money would at all times answer such a call.

I regard any law for the creation of money, that leaves a loophole for preference, discrimination or distinction to creep in, as defective and susceptible of profitable amendment.

The restriction of the sum of silver dollars that may be coined per month is not wise, because it may possibly leave a balance uncalled for, for coinage purposes. This balance finding no demand for monetary use, must be disposed of at reduced rates, to the injury of the bullion value of the silver dollars.

It is right that the coinage department of the Government be made self-sustaining, by suit-

able and proper charges for the coinage of the gold and silver bullion into money. But it is not right, nor just to the producers of these metals, to set a price upon them, quoted by sales in the English market, under a law of that nation which has demonetized one of these metals.

Under the bill before me, the Government is authorized to *purchase silver*, and coin a limited sum, monthly. This proposition savors too much of the character of a manufacturing speculation on the part of the Government, to meet with approval. It does not comport with the dignity of the Government. *Gold*, one of the metals of which coined money is made, is admitted to coinage without cost or charge to the holder.

Silver, one of the metals of which coined money is made, is by law made the *subject of barter*, and speculative effort—the Government unwisely discriminating between the two metals, and abrogating the clearly established usages of the past—denying to the producers and holders of silver the right and privilege accorded to the producers and holders of gold.

If the Government introduces and maintains this inequality of the metals, it cannot expect the people to do otherwise. The Senate of the United States have done a partial work in the law remonetizing silver—illustrative of a *very strong prejudice* against silver for monetary uses—or a very limited understanding of the laws necessary to make silver coin acceptable money.

My objection to Senator Booth's amendment to the bill lies in its making the silver certificates a legal tender for customs and public dues only.

Silver coined and exchanged for these certificates under this limit of tender, results in confining the silver coin, as well as these certificates, within the control of the Treasury Department, when silver coin and the certificates that represent it should be of equal tender power, and subject to as wide a range of use as gold coin. If Senator Booth's amendment has been correctly reported, his certificates are barred for all uses as money, in trade between man and man. This is clearly a fault on the part of Senator Booth's amendment, to omit to make these silver certificates a legal tender for all private debts as well as for public dues. In degree, these certificates bear the relation to silver coin that legal tender National Bank notes bear to greenbacks—in greater degree objectionable, because shorn of a power of use in a wider range of demand. This looks very much like an act to remonetize silver, and open a way to enable the Secretary of the Treasury or the banks to keep it out of circulation among the people, by converting it into these certificates.

The bill, with all its shortcomings and defects, was probably the best that could be done by Congress at the present time, and furnishes to the people the promise of more and better legislation in their behalf in the future. Had the bill provided for mint coinage capacity to the full extent of the production of the precious metals, and ordered coinage as fast as the metals should be offered, the contingency of having money in the Treasury to buy silver to coin would have been avoided.

THE CO-RELATION OF GOLD AND SILVER.

How to Restrain the Exportation of Gold.—Protection of American Interests the True American Policy.—Advance in the Value of Gold; the True Method of Sustaining the Double Standard.—Dollars of Silver, 14½ Grains; Dollars of Gold, 24 Grains.—A Scheme of Illimitable Advantage to the Nation.

By Col. Henry S. Fitch.

"There is nothing so successful as success." To break the center of an enemy's column proves more disastrous than to turn its flank. The Government of the United States has been engaged in a financial contest continually, since the Declaration of Independence; and the struggle has been attended by many disasters, with never a victory to record. It has been *outgeneraled* in every financial manœuver, and forced to retreat, with great loss, from every attack made upon it.

Is it not time to adopt a different method of procedure? May it not be wise to exhibit a spirit of less forbearance, and, for once in a century, become aggressive? May it not be good policy to resort to such strategic devices as our *enemies practice*, and end the contest at once and forever? Is it not advisable that the Government put some of its financial leaders upon the retired list, and officer the State with men of courage, resource, and invention—men of mental strategy and craft, to cope with and overthrow the common enemy—men who can forge, like Jove, a lightning-bolt, and send it to the marrow of a plot against the common welfare, whenever such service shall be required for the protection of American interests—men whose hate of foreign intrigue in our affairs is built upon their very bones, and whose souls abhor all reliance or dependence upon foreign powers? May it not be practicable, and is it not vastly desirable, that the people of the United States announce a new Bill of Rights—a new Declaration of Independence—a new charter for liberty—which, among other things, shall commit this Government to a most vigorous and hostile opposition to the creation of all foreign credits, and unmistakably ally itself to the policy of reconstructing our credit *at home* upon a broader, more liberal, and far more comprehensive basis?

Measures of importance to the national welfare may be stated by a citizen (however humble) in a Republic, without the charge of and impertinence; I will proceed to suggest to

the Government that an attack be made upon the *center* of the foreign financial column, and that it be broken at whatever cost, and that its forces be routed utterly. Let those who fear carnest work keep themselves conveniently distant from the battle-field. To drop metaphor, and to explain clearly the methods of advantage open to this nation, and by which it can secure a financial victory over those foreign mercenaries who have so persistently harrowed it, I will say:

That it is the monetization of the precious metals, under the coinage laws of each Government, which determines their value to each Government. That demonetization of either metal infracts the value of the metal, so cast from monetary use, in the States only where its use as money is discontinued. That Governments may make money of whatsoever metal they please, and that the *legal tender* given to its coinage or paper money is the power which renders it sovereign in use.

Holding these views to be true, and believing them impregnable, may not this nation, or the Government of any other nation, *advance* the value of either monetized metal, by putting less weight, or degree of fineness, into each coin, *without loss* to the Government, and sometimes with very considerable advantage to its exchequer? Consulting well-established precedents, and urged by exigencies of uncommon importance to the United States, I propose that Congress, by law, *advance the value of gold bullion, say five per cent.*, in the form of gold coinage which shall require, say 24 grains of gold, 900 fine, to be put into our gold coin dollars. At present, our laws require 25 8-10 grains of gold, 900 fine, to be put into a gold dollar. The device presented is simple, and has many advantages to recommend it. Indeed, it may be confidently asserted that no law passed by Congress, within the last century, can be compared with this measure, in legitimate effects to benefit the nation.

The proposition is, to monetize silver by a Congressional enactment, which shall admit of the coinage of our entire production of that metal, at the option of the holders or producers, into money, at the rate of 412½ grains, 900 fine, to a dollar. Thus we will reinstate silver coin, and consequently silver bullion, to the status of value and use which existed before demonetization in 1873, and which was in force at and during the period of contracting the present bonded indebtedness of the United States.

By such an act, the Government will return to the policy of guarding and properly protecting its interests—forgotten and scandalously ignored in 1873 under the material blandishments of Mr. Ernest Seyd, the English emissary sent to this country to capture the American Congress, and whose efforts were attended with a success not less remarkably to his credit than it was disastrous, shameful, and degrading to the nation.

Let Congress shall forget what really constitutes money, it may be well to remind it of the necessity of making silver coin not only a full and unlimited legal tender, and entirely *unrestricted* in the sum that may be coined; for it is by this equality of function with gold coin that it becomes of use, and it is by unrestricted sums that may be made of it, that its standard of equivalence with gold can be maintained, or the fixed quantitative relation of the two metals made practicable.

This Government may yield, if necessary, to a demand for readjustment of the quantitative relation between the two metals, and the possible necessity for a wider separation of their coinage values has not escaped the attention of the writer of these pages. Nor has he neglected to provide a practicable method of accomplishing this end without injury to these metals for monetary uses or the interests of the Government and people.

If England and Germany (creditor nations) become fractious, and insist that the ratio shall stand at 17 or 18 of silver to 1 of gold, this essay is intended to show in what manner such a status may be attained and their wishes accommodated, without any injury whatever to this nation.

This will develop a plan, for, acceding to these foreign demands, possibly new and somewhat startling, but nevertheless worthy the attention of thinking minds. It will accede to the change of the present ratio—not by *depreciating silver*, as these powers so earnestly desire—but by *appreciating gold*.

If it be necessary, quotations can be made of their own logic in support of the method. There are several sides to a triangle.

By the monetization of silver, as recommended, we will utilize our silver production in the highest form of its service to us, *without loss*, and we may, if we please (adopting the propositions herein set forth), *let gold dance for awhile*, or mount to the top of the obelisk, if a demand for it shall carry it there. As this proposition touching a reduction of the quantity of gold required for each gold dollar, and a re-coinage of coin of that metal is new, so far as the writer is aware, it may be well to name some of the considerations which are thought to recommend it:

1st. Gold, so advanced in value by this nation, would, to the extent of its accumulation at this time in the United States, be worth just as much more than it is now held to be worth, as the lessened number of grains would be worth convertible into the new gold coinage, and, to which extent and per cent., the nation would become enriched. If five per cent. were fixed upon as the rate of nominal advance, then the gold in our country would be correspondingly increased in value to us.

2d. All after-production of gold would be worth in *gold dollars*, say, five per cent. more than if the present status of quantity in our gold coin were continued.

3d. This advance in the value of gold, coupled with the remonetization of silver, on the basis of 412½ grains to the dollar, would be very likely to settle permanently the value of the two metals, and greatly stimulate the industry and enterprise employed in their production, and establish and keep perpetually open a *field for labor* of the greatest importance to the country.

4th. Silver, fully remonetized as proposed, would furnish to the nation a volume of "coin" very desirable to provide, whereby the nation may fulfil the *letter of its "promise,"* of which it has been pertinaciously reminded during some years past, and place the Government upon a plane of monetary stability very gratifying, considering the limited supply of gold and the considerable sum of coin it is called upon semi-annually to provide. Foreign holders of our bonds and other securities need not complain of our employment of silver coin in the cancellation of our indebtedness containing the same number of grains of silver which it contained when "coin" payments were promised, especially after we have adjusted the standard of relation of the two metals, as proposed.

The Governments of England and Germauy put up a very considerable conspiracy to "bear" silver. The Government of the United States should check their nefarious work by "bulling" gold. This is the compensating process, too long neglected by this nation.

Our own citizens can have no cause of complaint against this form of adjustment, because dollars of silver or dollars of gold would be *full dollars* to them.

Persons having occasion to make remittances of coin to foreign countries cannot be greatly injured, for the reason that the relation between gold and silver would be measured by the ratio of value and distance of equivalence which the London market demand for it—five per cent. advance of the one, or five per cent. discount on the other, *are equivalents in adjustment.*

5th. Were the Government to authorize the coinage of gold dollars containing 2.4 grains, or 1 8/10 grains less of gold than exists in its coinage at the present time, the new coin must become as popular and useful to us as that now existing; because it would properly represent under our laws the unit of a value, and all the functions of use which attaches to other coinage. The intrinsic or bullion value of gold would of necessity be equal (as it is now) with the gold coin it was capable of being converted into by coinage; and, if it was worth such value at the mints of the United States in any lawful money of the Government, it could not reasonably be objected to by its citizens.

6th. That gold coin containing but 24 grains, 900 fine to the dollar, would *not be as valuable for export*, I take great delight in admitting; and it is possible that the people, when they arrive at an understanding of this fact, and how happily its retention is made to serve the common welfare, will stand by the method and enforce its adoption.

There is one point that the public should understand in connection with this proposition, viz., If the Government pays, under its coinage laws, one dollar in gold coin, or other lawful money, for 24 grains of gold, 900 fine, this metal becomes the representative of money in the sum a given quantity of gold is capable of being coined into; and 24 grains of gold becomes intrinsically worth one dollar.

7th. Before proceeding to explain the further benefit which this system promises upon domestic and foreign trade, I will refer briefly to the suggestions of the Gold Ring, which urges that silver dollars shall contain 420 or 430 grains, 900 fine, of silver. Before silver was demonetized it stood firmly in quantitative relation to gold as 16 to 1, as before stated.

When silver became demonetized—that is, when its use by this nation *as money was discontinued*—the bullion value of silver declined, as was natural, and only then were the people brought to suspect it of unreliability as a standard of money. Now, if silver be again remonetized by this Government at the original allowance of 412½ grains to the dollar, certainly silver bullion, in our country at least, must again advance to a value corresponding very nearly to the sum of silver coin it is capable of making at the legal rate of allowance. At this rate of 412½ grains, the country would have the advantage of no after disturbance. But if, as the Gold Ring desire, 420 or 430 grains were made to constitute a silver dollar, silver bullion would become permanently decreased in value, so long as this rate was continued under our coinage laws, in no sense serving the nation with advantage, and leaving to the manipulators, still, the possibility of effecting a further decline, if desirable to them, which they would be more likely to do, finding this nation ready to yield to them now. It is for Congress to consider whether, if the concessions asked for by this gold ring be acceded to, it would not aid the combination in an effort to make a still further and more disastrous reduction in the value of silver, and possibly drive it from monetary use altogether. It is the gold standard these mercenaries want, for objects which our Government should have realized long ago.

Let us suppose, however, that this Government were to coin silver at say 430 grains for dollars, and that other nations, more wise, were to refuse to depreciate their silver coinage and hold to their present status, the position the United States would occupy would be not at all enviable, since it would have fixed a money rate for silver dollars which on account of an increased demand and added value must demonetize its silver coinage and revert it back to the field of barter and speculation. It could no longer be money, because its bullion value (430 grains) would be more than the face of its coinage implies for export, and leave us again stranded upon the barren shore of a one only gold standard. There is a peril in this scheme of the Anglo-American Gold and Bond Ring which it were well for Congress to comprehend. It does not seem to occur to many of our statesmen that gold or silver coin

exported ceases to be treated as money on leaving our ports. Our coin, however beautiful to the eye or valuable to us as money, is valued only for the bullion it contains when it leaves our shores, and it becomes as much the subject of barter as wine, wool, or wheat, in all foreign countries. Worse still, when it leaves our shores its destiny is cremation. The fair form of the Goddess of Liberty, and our feathered emblem of Freedom, are incontinently smothered in the melting-pots of some Magian Prince, and our imaged messengers of gold and silver return to us no more forever.

I have thus touched upon the question of silver remonetization, now under consideration in the Congress of the United States, because of the relation it bears to gold coinage, and the laws which affect the bullion value of the money metals. Both being fully monetized, both would become subject to the same law regulating their intrinsic or bullion value. And now to the main proposition.

8th. The effect upon our foreign trade, by advancing the value of gold, or by decreasing the number of grains of gold in our gold coinage, is of very great importance to consider. Our productions and manufactures, sold in foreign countries for gold, would have their values enhanced at least five per cent., by reason of the ability to convert foreign gold coins into our own coinage, at a profit to the importer thereof. While it would require some time to bring about a condition of exchange in favor of this country, its ultimate accomplishment would be certain, and more speedily attained than by any other known method. Our people would be more careful in contracting foreign debts, where gold was demanded in payment, necessarily operating to check undue importations. Foreigners visiting our country, and others providing balances in this country, would cease the purchase of exchange, and deal in gold, for the profit afforded them by conversion into our coinage. Foreign purchasers of our great staples, and other commodities, would at once perceive the advantage to them of providing foreign gold, and the conversion of it into our national money, with which to make payments. Many methods of profit to foreigners, by the per cent. of advance offered by this plan, would help to swell the grand aggregate of our gold accumulation.

Thus a threefold advantage would ensue to this Government and people. It would tend to a rapid and vast accumulation of gold, create a greater demand for our productions, and effect a decided diminution in the sum of our importations.

This may be considered a brief statement of the computable effects of the system; but the effects upon the nation, of becoming the absolute masters of the situation, holding the control of the precious metals of the world, and becoming at once the dictating power of the financial policy which shall obtain at home and abroad, and all the attending advantages of such a condition, are beyond calculation, and only necessary to hint at, in this essay. A Government which can accomplish so much for the best interests of the State, by the passage of one act of legislation, should give to this proposition its careful examination and study, and act with promptness, if adoption of the plan is deemed advisable. It is for the Government to consider its powers and its true policy in this matter. The Government must perceive that an act on its part which will make gold worth five per cent. more to its people than it is held to be worth to the people of other nations, would most speedily solve this money question and turn it in our favor.

The desire of the country is conceded to be the accumulation of money—gold money—although it may be substituted by paper money as a circulating medium, and left at rest in banks or in the Treasury of the United States. But till now the way has not been made plain for the accomplishment of so desirable a result. The desire of the country has been to bring about a balance of trade in our favor; but our enormous foreign debts, our extravagant imports, and our utter imbecility and impotency, as a Government, to parry the eternal side-thrusts of foreign mercenaries, have carried a solid column of disasters against us, and defeated and disappointed our reasonable demands.

To-day the masses are occupying the position of bond-slaves to foreign powers, and stand uneasily and unhappily on the verge of a revolt. There are some who will declare that foreign nations would protest against so patent an innovation upon the schemes and customs so long enforced by them, without demur from anyone. Well, suppose these foreign nations do protest? This nation can afford to listen to their murmurs with polite condescension (if it has any dignity left to it), and the reply may be suitable and proper, that the United States embraces a wide expanse of territory, that it possesses the most illimitable resources for production and manufacture, that our population already reaches 45,000,000, that it is understood that the Government was in duty bound to guard its own interests, and to protect its own people, and that if it has failed in the performance of its duty to its own in the past, it must not be construed as a surrender of its rights as one of the great nations of the earth; that its people had of late bestowed some attention to the subject of finance, and that it had determined to pay some heed to the demands of the people; further, that it had discovered that it owes to foreign influence, chiefly, the *demonetization of silver*, which effected not only distress, but pecuniary loss upon the people, and considerably jeopardised the financial provision and credit of the Government, and that after great and most careful deliberation, it had come to the conclusion that it could afford to advance the price of gold, *inasmuch as it cost the Government nothing to do so*, and that it had been ascertained that the advantages to it and to the people of the United States were absolutely incalculable.

Right here, I may be excused if I introduce to the readers of this little pamphlet, for the better illustration of my subject, two eminent dignitaries—Mr. "Johnny Bull" and "Brother Jonathan," and record some things of a supposed colloquy between them, in the event of a project of this Government to advance the price of gold :

Johnny Bull—"But your Government owes me vast sums in bonds, and your railroad and other corporations a still larger sum, on which, I have made the calculation to be paid in gold."

Jonathan—"Yes, Mr. Bull, I admit it with very great shame and mortification, I O U a very considerable sum which I propose to pay in dollars and cents, according to contract. I shall be provided with fifty millions a year of silver coin, which 'coin' I suppose you will not object to, since it is so 'stipulated in the bond.' My crops of cotton, wool, and wheat will be considerable, and the exchange which will be drawn against the export of these commodities will be payable in your own coinage, against which you are not likely to raise an objection. Possibly some of our gold coin may be paid to you, but if you don't consider it profitable to receive into your 'sovereigns,' you may return them to my country, where they pass at par for everything. We will have an abundant supply of good, sound, national paper money, which will be made the equivalent of our gold and silver coin, and I *guess* we will be enabled, in course of time, to pay you off. My Government has never attempted to dictate to yours concerning the form, or kind of money you institute for the convenience of your people, and it is expected that your government will abstain from interference with mine, in such matters."

Mr. Bull—"But, Jonathan, our standard is gold, and we neither want your silver, except by weight, nor your national paper money, except at a discount."

Jonathan—"I am aware of your desire, Mr. Bull ; your habit has always been to take our gold and silver coin by weight, whenever it landed in Great Britain. It is neither our wish nor expectation to change your habit in that respect now. There is nothing in the purposes of my financial advisers intended to obstruct you in your peculiar mode of doing business. You are not asked to take either our gold, silver, or paper money—made especially to suit my own people—if it is not for your interest to do so. Your sharpest financiers have said that 'silver has only depreciated, as compared with gold'—that comparable with the world's commodities, the value of silver is unchanged.' If this be so, then gold must have advanced, or silver and the world's commodities have declined in value."

"If gold has advanced, then we are justified in our project of adaptation to its advanced status. If silver and commodities have only declined, then it can be no loss to you if we pay you in our commodities at a price regulated by the ratio of decline. I do not believe the logic of your financiers is true or at all reliable, but accept it as you would have us do, to suit the purposes and interests of my country. Your financiers, like 'Mark Twain's Jumping Frog of Calaveras,' are too heavily handicapped to manifest a lively apprehension of the question—they are evidently too well fed, to see clearly the mistake of their position, otherwise they would have discovered that the announcement of unchangeability of the value of silver with value of commodities amounts to a declaration that silver is more stable in value than gold, and should naturally and rationally constitute the standard, and that gold, the more *variable metal*, is the metal to be carved into a shape and condition conformable with the truer standard. You, Mr. Bull, want the United States to continue the depreciation of silver and property, and to help you hold gold steady. You will excuse me if I am led to act somewhat independently in this matter. Our young brood of financial chicks have pecked through the flimsy, sophistical shell of this gold standard business, and perceive that it is within the province and power of the Government to arrest 'the wreck of matter and the crash of worlds,' by entering boldly into competition with you for gold, and to *bid for it by the measure of a silver dollar of 412½ grains*. I believe that in that manner we shall be enabled to arrest the decline in silver and all other commodities, and profit as you have done, by speculating a little in gold. How like you the idea, Mr. Bull?"

Johnny Bull—"If you advance the price of gold, by putting less in your coinage, I shall have the same thing done for my 'sovereigns'—what then would become of the policy to be pursued by you?"

Jonathan (complacently)—"I do not propose to tell you all the secrets of my thoughts upon this subject, but this I will say—that if you make the advance, as you promise, it will gratify my people very much. They are considerable producers of that metal, and will be glad to observe your appreciation of it *frequently*. I will assure you, Mr. Bull, that you will find my people quite lively in all such speculations. They have calculated very accurately the disposition of your subjects, and will repeat the experiment on you, as often as you approach to our bid for it. We intend, having found that we can well afford it, to pay *five per cent. more for gold* than any nation on earth, and henceforth, to take a hand in this gold contest, and see what will come of it. For various reasons, we have quite too long neglected it."

Mr. Bull—"But, Jonathan, do you not perceive that this mad project of yours would tend to draw an undue proportion of the gold of the world to you, and that other nations would not stand it?"

Jonathan—"That is exactly the purpose of my second crop of financiers."

Mr. Bull (quite conciliatory)—"Jonathan, you are expected to remember that a very close relationship exists between us, I am regarded as your honored progenitor, and such injury as you contemplate the infliction upon me, at least, would be rank ingratitude and unnatural."

Jonathan (assuming a sternness and dignity unlike him for many years)—“Our memory, Mr. Bull, has many times seemed at fault, greatly to our damage. But, sir, I remember the traditional relationship, and that in our youthful dependence upon you we were made to earn all that we ever received at your hands. When we arrived at the age of ‘twenty-one’, we cast off our cables from the ‘island home,’ and started life on our own account. You, Mr. Bull, objected to our independent effort, and put us to great privation and hardship in the defence of our rights and our lives. We succeeded more by our own courage and powers of endurance than by your paternal clemency. By various arts and methods you have stricken our commerce, obstructed our peaceful enterprises, laid waste our properties and honest accumulations. You have made demands on us unnatural and unjust; you have made war upon us; you have conspired to stir our people to insurrection, and urged them and assisted them in armed revolution; you have tried to crush our manufactures by flooding us with your goods; you have continued a financial and most aggravating war upon our interests for 99 years; you have instigated crises and panics to crush our enterprises in every decade of our national life; you have actually invaded our legislative halls, and purchased a disloyal support of your schemes against our welfare.”

“We have a vivid recollection of your paternal regard, and propose to award to it every consideration of favor that it has earned. We have a lengthy account and record of what your paternal love has cost us. We intend to compel a return of that which can be computed by figures. We will carry through this scheme, not only for the monetizing of silver, but also for the recoinage of gold, and we will henceforth hold a strong hand in the control of the precious metals of the world.”

Mr. Bull—“Will you not meet us in an international convention and adjust these questions?”

Jonathan—“We will first remonetize silver. You and your German cousin will find your schemes opposed, and we expect, if a call be made for such a convention as you name, you and your cousin will find it convenient to be absent. You will find in time that we mean business. When we shall have profited by the adoption of a wise monetary system—when our monetary accumulations shall have satisfied us, and our losses have been in reasonable degree restored to us—when you shall be willing to receive a fair proposition from us, and act upon it with alacrity and in good faith, you will find the United States just and perhaps generous.”

Mr. Bull (excited)—“We will show you, sir, that the British Lion—”

Jonathan (interrupting)—“Mr. Bull, your British Lion has been so very long domiciled in Great Britain, and our experience of his prowess and ferocity so thoroughly tested, we feel but little apprehension of the further damage of this animal to us. We find *but one* animal on earth to which my subjects temporarily yield the right of domain when coming within the compass of his eye, and that is *our grizzly bear*.”

The controversy between these two high dignitaries closed with the usual ceremony, each seemingly entertaining for the other an equal affection. Brother Jonathan leaves the scene soliloquizing:

“Money of Gold—The King.

“Money of Silver—The Quecu.

“Money of Paper—The Protector and Sovereign Representative of Property and Labor, constituting a triune measure of value, each independent of the other, harmonious in service and accordant in use.”

“The Positive, Negative and Passive—The Trinity of Condition.

“Phosphates, Nitrates and Carbonates—The Trinity which supports animal life.

“Motion, Life, Sensation—The Trinity of Nature.

“Love, Will, Wisdom—The Trinity of Man.” And Jonathan’s scientific incubations became no more audible.

I have declared in several speeches upon the remonetization of silver that two more acts of Congress were necessary to bring all Europe to beseech a convention for the adjustment of this metal-money question, and to dispose foreign powers to yield to any terms of general monetization of silver that we may ask. I have not before stated the nature of these potential acts, but propose to do so now.

It is well understood that “human sagacity, aggravated by human want or necessity, seizes first on the nearest natural assistant.” The nearest natural assistant to silver is *gold*. It is its natural ally and main dependence. When one shall be attacked, the other must be brought to its support.

Thus it follows, when silver is attacked, and made sick by divorcement from its natural counterpart and protector, it is right to urge that monetization shall restore silver to her queenly place and dignity—that gold, the metal for the time preferred, shall be advanced so far in value, or, otherwise, diminished in quantity to each gold dollar, that the relation between it and silver may be equitably adjusted, and harmony again restored to the imperial household. This is the principle which I would have obtain, in an act of Congress, tending to the permanent establishment of the *double standard*. The other proposition referred to as very desirable is the enactment of a law by Congress, requiring that all contracts and stipulations for payment of money consideration shall be drawn *payable in lawful money of the United States*—otherwise to be considered by law invalid and non-collectable. This proposition is especially significant and proper, in view of the course which some of the Pacific Coast States saw fit to pursue

during our struggle to maintain our national existence, some sixteen years ago, and is peculiarly appropriate at this time, to teach the bank ring in New York and elsewhere that their threats to vitiate a wise law of the Government by reducing their business to a *gold basis*, by contract, will not be permitted by a power duly authorized to regulate the value and functions of its monetary creations.

To those of my countrymen who desire the welfare and happiness of the people of the United States, and who believe that the Government should inaugurate a financial policy calculated to render this nation absolutely independent of all foreign aid, and thoroughly fortify it against the machinations of all foreign powers, I ask to read this essay, and especially to deliberate upon the following queries:

1. Is a dual metallic money desirable?
2. If desirable, what shall be its quantitative relation?
3. If relation be changed, shall silver be depreciated by increase of grains per dollar, or shall gold be appreciated by requiring less weight of gold per dollar?
4. Is it not better to *increase* than to *reduce* the metallic accumulations and capital of the country?
5. Will not monetization of silver at 412½ grains per dollar be equivalent to an increase in the value of silver bullion five per cent.?
6. Will not gold coinage of 24 grains per dollar increase the bullion value of gold five per cent.?
7. Will not adjustment of relation, consisting of grains of each as designated, constitute a gain of ten per cent. to our metallic money capacity?
8. Would such adjustment add to, or diminish the bullion value of each metal, whether or not required for exports?
9. What effect will such adjustment (as named) have on domestic money supply?
10. What effect on production of the precious metals?
11. What effect on our internal commerce?
12. What effect on importations?
13. What effect on exportations?
14. What effect on payment of foreign obligations?
15. What effect upon our credit at home and abroad?
16. Would other nations advance gold to correspond to our advance?
17. Will it be sound policy to continue competition for control of gold; if not, why?
18. Would it be desirable for this Government to refuse a conventional agreement in relation to the metals?
19. Will not the plan proposed secure to us absolute independence from foreign nations if persisted in?
20. Can we possibly attain to such favored condition by other known or better process?
21. Is it desirable to restrain the export of gold?
22. Can the drain of gold be stopped by other or better method?

There is far more of import in this measure than relates to the adjustment of the silver problems. It is a measure pregnant with beneficent results to government and people. Look to it without prejudice, and for once declare that the reign of British financial tyranny shall end its dominion over the American people. Light again the thoughtful fires of a second revolt against British avarice. Permit the rays of a brighter philosophy to beam upon our effort, and the true courage of an independent nation may again assert itself, and find un baffled sway in a land entirely free. Consider these propositions; ponder upon these questions. To reason well emphasises a good intent, and facilitates action in the right direction. The insolent demands of a mercenary oligarchy—the indefinite ideas of the unthinking mass—the iniquitous teachings of our so-called political economists; the increasing crimes, committed by men in exalted positions—the disturbances of social order—the invasions of *might* against *right*—the wrongs, the wretchedness, the wide-spread distress, all together forming an evil so widely prevalent, that life is put to shame, and solemnly appeals to the philanthropic sentiment of a higher and truer statesmanship than that which marks our late history. If there be virtue in a line of thought which vibrates on the side of American interests, let it appear with unmistakable purpose at the very door of our second century.

THE CENTRAL AND SOUTHERN PACIFIC RAILROADS, AND THEIR BENEFIT TO THE STATE.

BY THOMAS B. GARDNER.

So accustomed are we to great changes in our social and political experiences, that we fail fully to appreciate the magnitude of what may be termed revolutions, or more properly speaking, the fruition of full development into tangible realities of the ideas of former centuries. Three centuries ago, an Italian of comparative obscurity dreamed, as it were, of the adaptation of steam for propelling purposes upon the sea. A crude application opened the door and furnished an incentive to further experiment, and to-day his vision has assumed colossal propor-

tions, as the navies and merchant marine of the world demonstrate. The dream of Watt is realized in the operation of millions of looms in thousands of mills, and machinery the world over testifies to the grandeur of this materialized vision of a boy. Still again, in our day, we see a further adaptation of this agency to the use of mankind in the development of the resources of continents by means of railroads. Still another potent agency, a fitting companion that by its side, traversing the earth, co-operates in the work performed by steam in the progress of civilization. The vision of Franklin puts Puck at a discount, and instead of encircling the earth in forty minutes, we have done the work in as many seconds. These powerful instrumentalities have been developing into their present proportions for over three centuries, but to the nineteenth century the future historian and political economist will refer as emphatically the heroic epoch in the world's career.

TO THE RAILROAD

We are more indebted than to any other instrumentality for the enormous contributions to the material prosperity of nations that the present generation is witnessing. Yet strange and irreconcilable as it may appear to the thinking mind, the value of this element of prosperity is not yet appreciated as it should be. For the first introduction of rails, we look to Great Britain in 1672. These were constructed of wood, and were used for the development of the coal properties at Newcastle. In 1738 iron rails were substituted, and here was the initiatory step towards the present consummation of our railroad system; and it will be seen that wherever railroads have been constructed, it has been mainly for the purpose of developing the latent resources of a country. The first application of steam for locomotion in America was in 1782, which was merely experimental. In 1812, locomotives were introduced in England. In 1825, the first railroad was constructed in New England, and, in 1829, the first locomotive was imported from Great Britain, which served as a model for our manufacturers. In 1830, the construction of locomotives began in earnest in this country. Thus for years Great Britain took the lead in this branch of industry. To-day, in the United States, we have five times the length of railroad as has Great Britain. Such is our remarkable progress.

THE TRANS-CONTINENTAL

Series of America are among the wonders of the present age. When Mr. Bentou, in 1849, suggested the idea of connecting the Atlantic and Pacific, he little dreamed of the magnitude of the proposition, nor did any of his contemporaries appreciate the rapidity with which the thought would be made practical. The preliminaries to the inauguration of the enterprise are familiar to us all. Simultaneously with the discovery of gold in California, came the thought of rapid communication with the Pacific Coast; but it was not until 1862 that the importance of this enterprise was appreciated by Congress. In that year the two lines began their work in earnest—and to-day we have as a result, a development of resources that astonishes even those who are most familiar with its existence. To the Central Pacific branch of the trans-continental thoroughfare is the commercial world indebted for the development of the Pacific slope. Gold was the primary incentive to immigration, but this after all has proved but an auxiliary to the development of the agricultural and mechanical interests of the coast, and California in particular. Twenty-eight years ago our now thriving commonwealth was a comparatively barren territory. Her resources were undeveloped, and her agricultural capabilities untried. The railroad is the touchstone that has raised this community, in this short time, to the prominence of being the greatest grain-producing community in the world, in proportion to its area and population. In but little over a quarter of a century we find unproductive tracts clothed with waving grain, our once barren hill-sides and slopes laden with rich, fruit-bearing vines and trees, our bay teeming with an active merchant marine, bearing the products of over three millions of cultivated acres to every port in the known world. Again, our sister State of Nevada, but a few years ago regarded as the verge of the Great American Desert, by the advent of the Central Pacific and its tributary roads, has become one of the greatest producers of silver in the world, and to-day through this agency she sends forth in twelve months her \$51,580,290 of products from precious metals. While her mountains pour forth their silver streams in the lap of commerce, California with her golden harvest raises the amount of treasure product \$18,174,716 more; and the total export of treasure for the year 1877 reaches the enormous figure of \$57,613,870, within four millions of the entire national debt in 1860.

THE MAGNITUDE OF THE RAILROAD

As a mechanical undertaking can be appreciated in a measure, when we consider that, in the short space of fifteen years, a road, with its branches, comprising two thousand three hundred and twenty-one and one-half miles, has been constructed, and put in as perfect running order as any other roads in the world. In addition to this, and tributary to the Central Pacific road, are two hundred and fourteen miles of rail, running through portions of the finest timber and agricultural lands in the State. The territory opened up and developed by the system of railroads, in this State, is a marvel in its productiveness; and, as a lasting monument to those whose foresight and energy prompted the inauguration of this enterprise, stands our city, with its three hundred and eight thousand population, our palatial residences, our warehouses filled with the fruits of the commerce of the world, and our harbor a picture of active commercial life. The more we regard the present result of the grand enterprise, the more fully do we

appreciate the power of energetic endeavor. As an evidence of this, our city shows for 1876-7 the total assessed valuation of \$260,262,343. The amount of exports from San Francisco, for the year 1876, reached the enormous figure of one hundred million dollars; while the amount of passengers by railroad during that year was sixty thousand five hundred and sixty-five; and statistics show that the average influx of immigration for the past ten years is thirty thousand. Without the railroad, this state of things could not exist. As a proof of the value of the railroad as a developing agency for the State, we find that, during the year 1877, the amount of wheat exported was 4,901,756 centals (and this was a dry year), valued at \$10,927,668; of flour, 435,736 barrels were exported, valued at \$2,681,636; of wool, there were exported 52,812,126 pounds, of which 44,961,919 pounds were by rail. The total value of the wool exported is \$9,499,381. For eleven months of the year 1877, the total amount of freight by rail to the East was of the value of \$85,765,820.

AID RECEIVED.

It might be well to note that the cost of the Central Pacific Railroad and its branches was about \$140,000,000. It was ascertained that so gigantic an enterprise could hardly be accomplished with private capital alone, hence Congress was appealed to for the loan of Government credit, and bonds were issued to the amount of \$27,855,680, the principal and interest of which are to be paid by the Company.

"The whole amount of the bonds issued in aid of all the Pacific railroads is \$64,618,832. The annual interest on the same is \$3,877,129.92. The earnings thus far have paid about thirty per cent. of the interest, which, deducted from the annual interest, leaves the net annual expenditure for interest \$2,713,991.

"The net result to the United States may be thus stated:

"The cost of the overland service for the whole period from the acquisition of our Pacific Coast possessions down to the completion of the Pacific Railroad was over \$8,000,000 per annum, and this cost was constantly increasing.

"The cost since the completion of the road is the annual interest—\$3,877,129—to which must be added one-half the charges for services performed by the Company, about \$1,163,133 per annum, making a total annual expenditure of about \$5,000,000, and showing a saving of at least \$3,000,000 per annum."

These were currency bonds, and most of the money realized from their sale was expended here. They were sold for very much less than par, and there can be no question that when taken up will be fully up to par. This difference the Company has to meet. The State pays interest on \$1,500,000 of the Company's bonds, and this is done under a special contract between the Company and the State, the railroad doing a large amount of work for the State without cost as an offset. In view of the benefits the road confers upon the State, and the herculean task of its construction the assistance rendered both by the State and the General Government was a beneficial investment in the highest degree.

THE BENEFITS

Conferred by the road are numerous, and as a recompense for the assistance given, are an ample equivalent—indeed, their value can hardly be appreciated. A bare mention of them will convince all of this fact, save those cavilers who can see no good in any exhibition of public spirit. In addition to the \$140,000,000 distributed in the construction of the road, the company pays about \$330,000 per annum in taxes to the State. The number of miles of road accompanied with land grants to the company, is eight hundred and one, which has furnished already about eight thousand farms now under tillage or in process of occupation, it being the policy of the railroad company to induce small farmers to settle upon their lands, and hence they are selling them on liberal terms, long time, and at low rates of interest. A large portion of the land originally held by the company has been sold and opened up. Prices have varied from \$2.50 per acre, and upwards, according to location and quality. This does not look like monopoly. The average amount of disbursements, monthly, among its ten thousand employes reaches about \$320,000. This vast amount is mainly circulated at home, and the benefits reach all branches of trade. In addition, it may be remarked, that this amount is really distributed among at least forty thousand souls to whose support it contributes—for it is safe to assume that the ten thousand employes, on an average, will represent at least four individuals. Another benefit that the road confers, and one that is not taken into consideration by those who see no good in corporations, is the constant reduction of freights and a corresponding increase of local commerce. This increase, though in a degree in proportion to the influx of population, which of itself is induced by speed and cheapness of travel, is no small item in the material advancement of our community. Before the road was completed, the freight from Sacramento to Virginia City was five cents per pound, or \$100 per ton, and then communication was very uncertain, and could not be maintained at all during four months in the year. Under the present railroad system, we have daily transportation, and the low average rate of \$26 per ton, and this, too, over one of the most difficult roads of construction and operation in the United States. To the railroad we can safely attribute the influx of population in the State of Nevada, and the prodigious development of her mineral resources.

THE SOUTHERN PACIFIC.

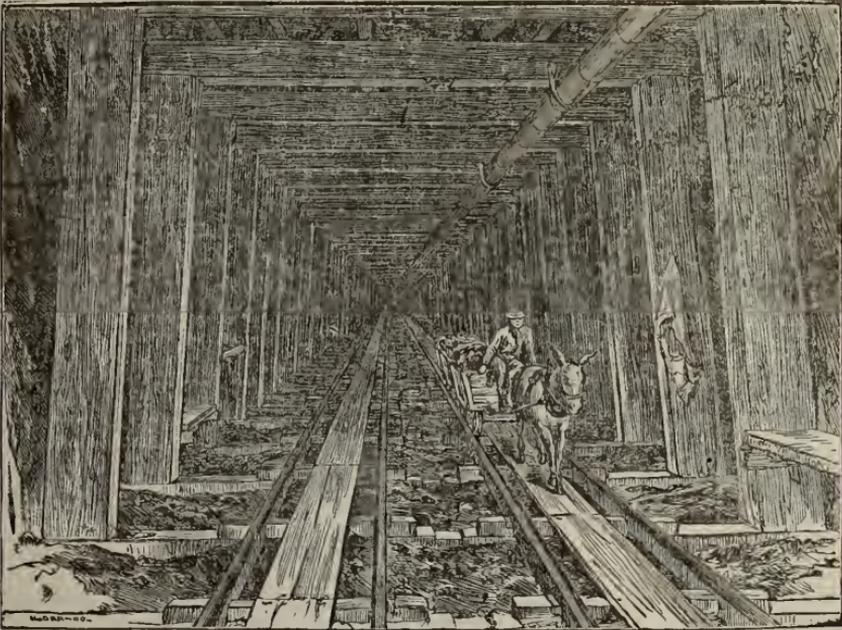
This Railroad, one of the most important and lengthy on the American Continent, is fast assuming proportions of importance to the commercial world. Should the plans of the Directory be carried out, the day is not far distant when it will assume an exalted position among the leading railroads of the country. As it at present stands it is a prodigy, and its surroundings are such that its rapid development and extension still further cannot be long delayed. The present organization of the Company was effected in October, 1870, by the consolidation of the San Francisco and San Jose Railroad Company, The Southern Pacific Railroad Company, The Santa Clara and Pajaro Valley Railroad Company and the California Southern Railroad Company. Having obtained by this consolidation all of the franchises belonging to these roads, the work of thorough equipment and extension was begun. In the improvement of its property on Mission Bay, in this city, the Company has expended, with the Central Pacific Company (both owning that property jointly for depot purposes) \$352,224. In September, 1876, the road was completed to Los Angeles, and immediately thereafter work was resumed at this terminus, and rapidly pushed forward until the Colorado River was reached a few months since, crossing to Yuua, in Arizona—giving a total length of seven hundred and twenty miles. The purpose of the Directors is to push on until it reaches the banks of the Mississippi. To accomplish this end the Company has simply asked the Government for a land grant, intending to construct the road from its present terminus to the proposed eastern end at its own expense. This, of course, brings it in competition with Tom Scott's Texas Pacific Road, and the question of difference between these two organizations will probably be settled by the present Congress. Since the completion of the road to Los Angeles, the Company has acquired the property and stock of the Los Angeles and Independence Railroad, thus securing a valuable landing at Santa Monica, and are also pushing on towards the thriving city of San Diego, having already reached Santa Ana. The construction of the Southern Pacific Railroad thus far has given employment to at least six thousand souls. The actual cost of construction reaches the sum of \$65,000,000—and it pays to the State, taxes to the amount of \$183,000. Its importance may be seen when we consider that, as at present constructed it has contributed largely to the development of the agricultural lands, coal, oil and other mineral deposits of the counties of Santa Clara, Fresno, Tulare, Kern, Los Angeles and will, ultimately, San Diego, as well as the entire San Joaquin Valley. Indeed, we may say that the whole district of Southern California will, ere long, fully recognize the potency of this instrumentality in its substantial development. In addition to this, "the extension into Arizona will develop an extensive business with that rich mining territory and command the entire business of Northern Mexico and adjacent country, securing to this State its valuable trade, and when the eastern connections are made will give direct communication with all of the southern and southwestern portions of the United States." The value of the enterprise may be appreciated when we perceive that for the year ending June, 1876, the amount received for passengers were \$949,945.42; and for freight \$1,186,673.30. The road expenses were \$1,140,329. As the developments of the mineral resources of Arizona progress, it will be perceived that an additional impetus will be given to every branch of industry along the line, the cost of mining in Arizona and Northern Mexico will be materially reduced, and the prosperity of that entire district which the road traverses will be greatly enhanced.

These are the two great corporations whose united influence has contributed so largely toward the advancement of our State to its present proud position, and the Directory are the men upon whom the insane wrath of irresponsible demagogues is heaped without stint. The reward for such evidences of enterprise from the hauds of a mob of uneducated and besotted fanatics would be the total paralysis of commerce, and the stoppage of all internal improvements. It is fortunate this class of ingrates have not the destinies of communities in charge, and that we live in the faith and belief that the railroad work of improvement will still go on, in accordance with the requirements of commerce and the advancement of the State's best interests.

These are but a few of the details that can be furnished from the brief history of our great thoroughfares; and we can but give credit to those who have dared to attempt to overcome even Nature herself, and make her tributary to the happiness of generations to come. Little did the Italian, with his crude experimental effort, dream in his fondest fancy that before three centuries had elapsed the site of his lowly cot would be in instantaneous communication with the remotest verge of another continent, then unknown in its full extent. Little did Watt dream that through the instrumentality of steam the dizzy altitude of seven thousand feet above the sea would be overcome, and travel as easy as over the smoothest plains of Great Britain, and through this means empires be founded, peopled, and developed into their present state of prosperity. And yet all of these fancies are realized in our day and generation, and the culmination of the theories of three centuries exists in our own State of California.

Thus it will be perceived that our State is exceptional in its rapid progress. It is indeed a prodigy—sprung from an embryotic condition into a full-fledged maturity, ranking in her vigor among the foremost commonwealths of the world; and while we recognize this fact, and indulge in an honest degree of pride, we can but appreciate that the magic wand that has contributed the most to this remarkable condition is the railroad, which in all countries and under all social systems is the great leveller and equalizer of the apparent inconsistencies of interstate and international intercourse. It is quite remarkable that in California at this late day,

with all the suggestive surroundings about us, there are so many who fail to recognize or acknowledge the debt due to the minds that conceived the idea, the nerves that grappled with rough nature, and inaugurated beneficent systems, the benefits of which we now enjoy. The foresight of the much abused Stanford and his coadjutors, pledging their entire private fortunes to the great and comprehensive work, first embraced the situation, and with an eye to the near future, they entered upon their self-chosen labor, knowing no hindrance, heeding no discouragement, determined to succeed, and to-day they are recognized by all thinking men as national benefactors as well as the founders of the material prosperity of their adopted State. The Central and Southern Pacific Railroads, their branches and tributaries, will continue to dispense their benefactions when their founders have passed away, and will ever keep fresh in the minds of future generations the record of their patriotic deeds, their energy and their public spirit. They will stand as monuments and perpetuate names that will be honored when traitors and cavers have gone out into that wilderness of nothingness, that buries all those classes in a sea of oblivion, forgotten and unhonored forever.—*Resources of Cal.*



THE SUTRO TUNNEL.

HISTORY OF THE GREAT ADIT—ITS CHARACTER, COST AND PROSPECTIVE USES.

It was only about two years after the first discovery of silver in what is now the Ophir ground of the Comstock Lode, that Mr. Adolph Sutro, who had already given much thought, examination and study to the subject of silver mining in different parts of the world, conceived the idea that the proper and economical method of developing the newly-discovered lode was by means of a deep adit running from Carson Valley directly to the lode, cutting it at what then appeared an enormous depth beneath the surface.

This idea, which at its first proposal seemed a good but utterly impracticable one, was the germ of an enormous enterprise, undertaken and carried to a now successful completion, through many difficulties and obstacles, in the face of much opposition, by the persistent and intelligent energy of its projector. For several years the scheme slumbered, or was lost sight of by everybody but Mr. Sutro himself. He had not only not given it up, but had nursed, developed and strengthened it, till at length, fortified with convincing arguments in favor of its usefulness and necessity, he this time brought it to the attention of the public much better prepared for a discussion and investigation into its merits than at first. This was in 1864. The Comstock Lode had by that time already yielded largely of the precious metals, and the whole people of the coast were interested in its permanence. It had also attracted the attention of the metal-

lurgists and geologists of Europe, as well as those of our own country. Hardly any one foresaw the possibilities or predicted the future resources of this great lode more clearly than Mr. Sutro. With this just appreciation of the matter, he insisted that these great mines should be worked on an intelligent and comprehensive system, and laid before the Legislature of Nevada his plan of a deep tunnel, asking for a franchise and the right of way. This was in the Fall of 1864, and in February, 1865, that body passed an Act granting the right of way to A. Sutro and his associates, and authorizing the construction of a Mining and Draining Tunnel. This Act did not provide any scale of charges or compensation for the benefits and uses of the tunnel, but left that question to be agreed upon between Mr. Sutro and the mining companies directly interested in the construction of the work. Armed with this authority from the State, he laid his project before the companies then mining upon the lode, and demonstrated to them the advantages of the work. Gradually, after months of effort and much expenditure of money, agreements were entered into with the mining companies, providing for the rates and charges to be paid for the benefits to be derived from the tunnel after its completion. To accomplish all this, it was necessary not only to demonstrate the utility of the work and its ultimate necessity, but Mr. Sutro had to overcome the great barriers of timidity and lack of interest in the subject. But at length, Mr. Sutro's pamphlet on the subject having excited general interest, the agreements, to the number of about twenty, comprising nearly all the companies then mining on the lode, were at length signed, sealed and delivered. These agreements provided that a royalty of \$2 per ton should be paid on the ore extracted from the mines drained, benefited or developed by the tunnel, which should be milled or sold, for all time to come, and fixed a certain rate of toll on passengers and waste rock transported through the tunnel. These agreements were drawn with such fullness and care that subsequent experience has suggested a necessity for no important change in their provisions.

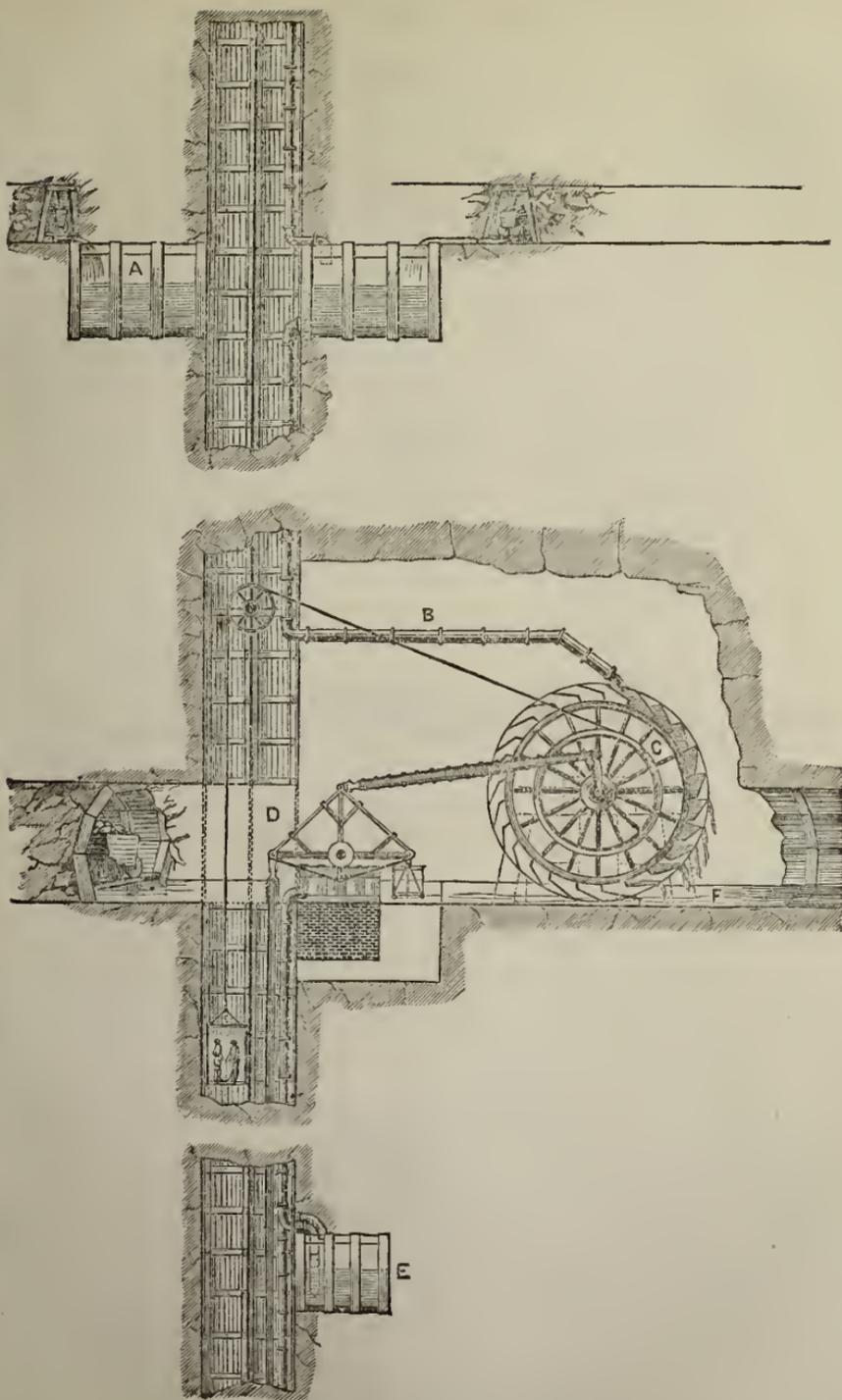
The fee to the mines was at that time, as in fact it still is, largely in the general government, and for this reason Mr. Sutro determined to apply to it for certain rights which could be only thence obtained. On the 25th day of July, 1866, Congress passed an Act "granting to A. Sutro the right of way and granting other privileges to aid in the construction of a draining and exploring tunnel to the Comstock Lode." This act also empowered the grantee to buy a tract of land at the mouth of the tunnel, withdrawing from sale 2,000 feet on each side thereof. Congress also conferred upon him the right to purchase such veins as might be cut in running the tunnel, confirmed the rates named in the agreements, and made the patents thereafter obtained by mining companies subject to the payment of the royalty. Mr. Sutro was now fully armed for the undertaking with everything but "the sinews of war," the great motive power of the whole enterprise.

Having accomplished so much, however, his first work was to develop and strengthen the idea, and for this purpose he submitted his project to many mining authorities both in this country and Europe, and obtained from all a singularly unanimous expression in favor of the utility of the work. Thus encouraged, Mr. Sutro set actively about the difficult work of obtaining subscriptions for prosecuting the enterprise. The project, however, looked so vast, its completion so remote, and its requirements so great, that capital was slow to invest in a work where returns could not be expected until after its completion. However, capital had to be raised, and Mr. Sutro soon began to obtain subscriptions freely, succeeding in this matter almost better than he had hoped.

After obtaining subscriptions to the amount of nearly a million of dollars, he procured the Legislature of Nevada to memorialize Congress for a grant in aid of the work, and with what seemed a good prospect of success. But at this juncture the active promoter of this scheme encountered much opposition from the mining companies, who sought to withdraw their subscriptions and to nullify the contract with Mr. Sutro, on the ground of his failure to fulfill on his part its terms. This opposition, while it hindered and postponed the work, did not prevent a commencement being made; nor, when once begun, did it more than temporarily interfere with its progress. Mr. Sutro pushed his enterprise with one hand and fought his opponents with the other, waging the contest with such persistence that the work has now very nearly reached completion.

The scheme of the Sutro Tunnel, in its relation to the mines of the Comstock Lode, is to make this a main adit, from which branches are to run throughout the whole mining district. From these branches it would be possible to cross-cut at proper intervals, and from the first set to run sub-cross-cuts, thus thoroughly exploring the whole ground by a grand net-work of deep tunnels, all connecting with the main artery. Through these channels would be drained the water of the entire district, obviating the enormous expense incident to pumping it to the surface. As a part of his scheme, this water, on reaching the mouth of the tunnel, is to be utilized for the propulsion of machinery, after the manner illustrated in the cut on the next page.

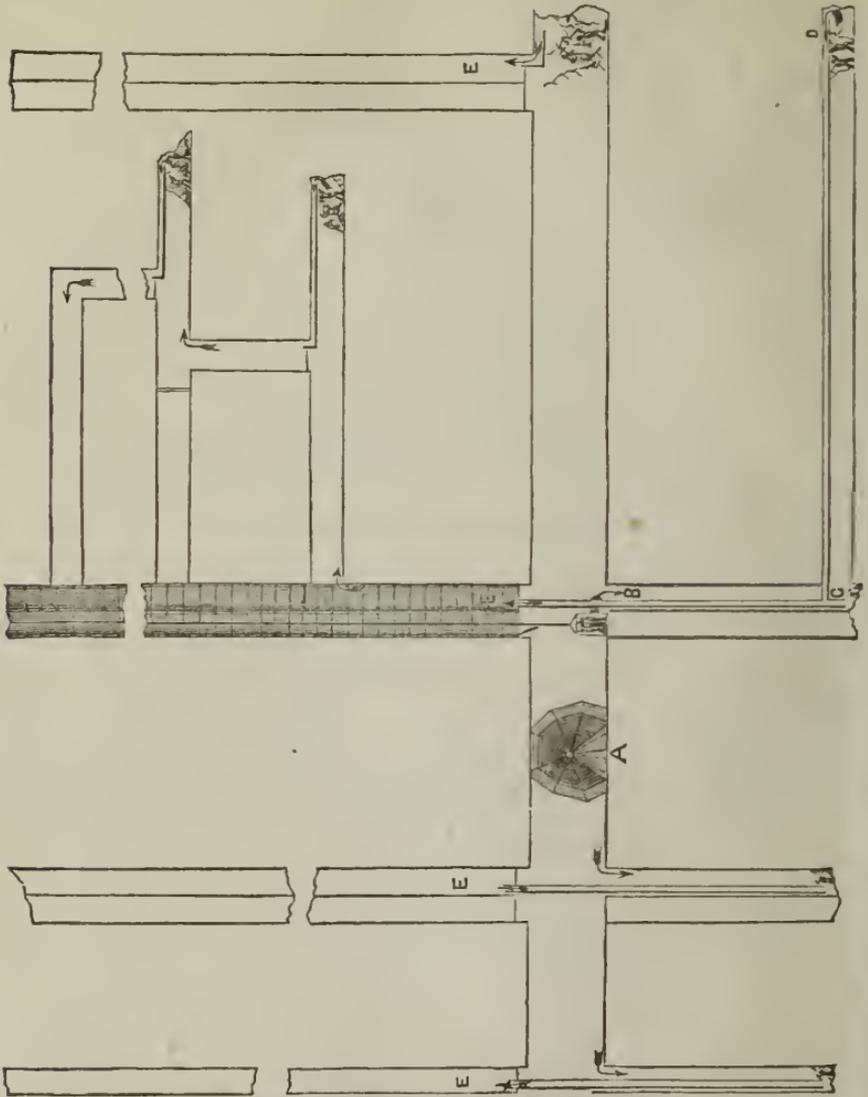
In addition to thus affording a ready means for exploring the entire territory, draining the mines and converting the water from a serious obstacle to a useful adjunct, this tunnel would supply a current of cool, fresh air to the shafts and lower levels of the mines, rendering them cool and healthy, instead of poisonous and unbearable. To say nothing of the increased comfort and safety it must secure to the miners, the ventilation thus afforded would enable them to



WATER POWER AT TUNNEL LEVEL.

The water entering the Comstock Lode above the tunnel level may be utilized as a motive power by collecting it in tanks as shown at A (say 1,000 feet above the tunnel), from which it may be conducted through pipes (B) to water-wheels (C) at the tunnel level, the water being discharged in the tunnel at F. These wheels may be employed to pump water, or for the purpose of hoisting or lowering men, material, etc., from *below* the tunnel level.

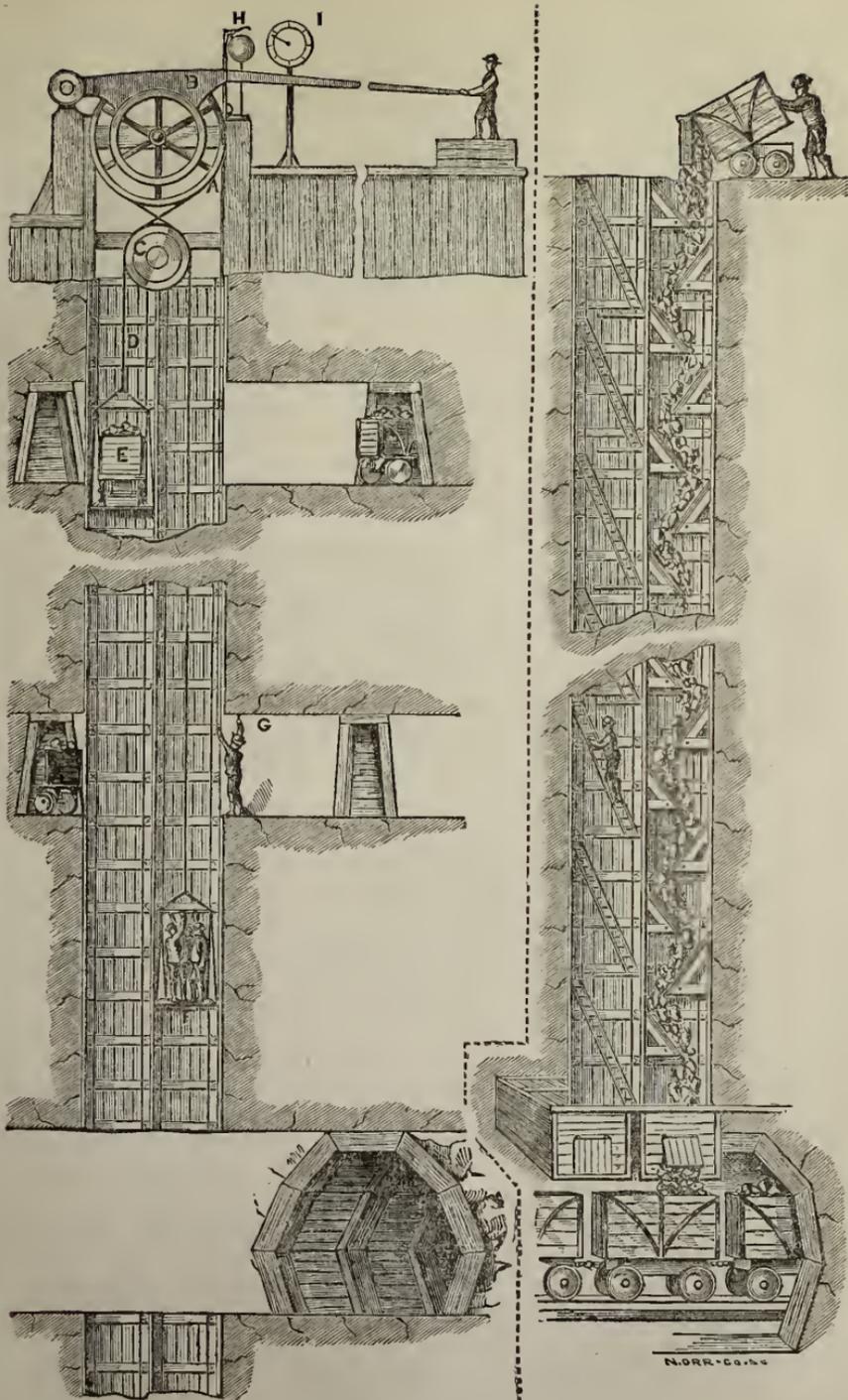
labor steadily and effectively, to the great benefit of the mine owners, as is shown in the diagram.



SYSTEM OF VENTILATION THROUGH THE SUTRO TUNNEL.

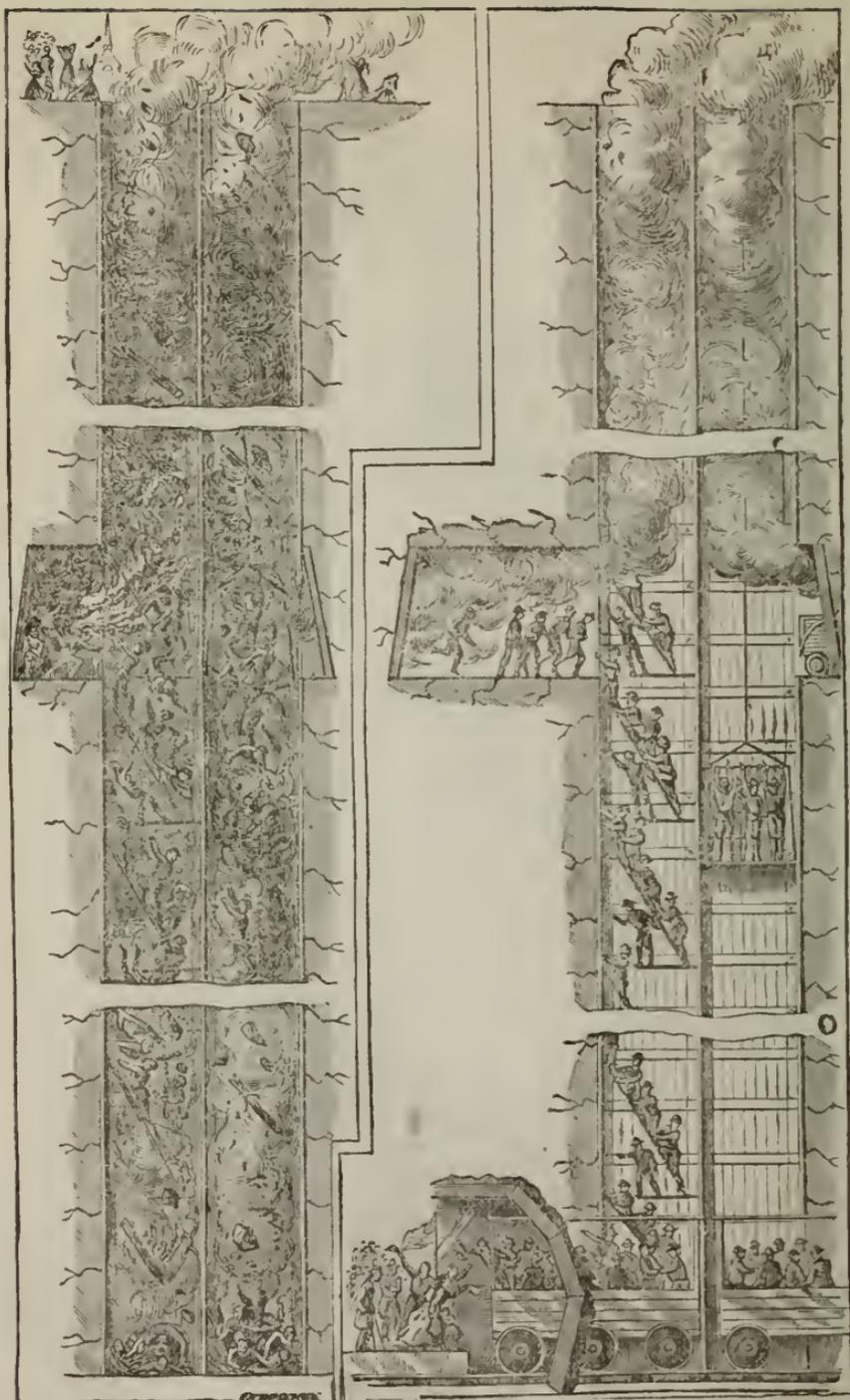
The mines will not only be ventilated above the level of the Sutro Tunnel, but also at the remotest points below it. By placing a partition in the existing shafts immediately above the tunnel level, which is pierced by a large pipe as seen at E, reaching down into the shafts and drifts below the tunnel level, the hot and vitiated air at these remote points will rise up through these pipes into the shafts, and through these to the surface two thousand feet above, while fresh air entering through the tunnel, A, will reach, passing down at B, the points where the miners are at work.

Thus the three chief advantages of this work served to promote economy, the consideration on which deep mining must be wholly dependent. Again, every pound of ore and waste rock hoisted to the surface increases in cost with the depth from which it has to be lifted. The cost of purchasing hoisting machinery and of afterwards running, renewing and keeping it in repair, makes a huge total when calculated for the mines of the entire Comstock Lode. But with such a net-work of tunnels as is above described, all material requiring to be removed from the mine can be thrown into cars, run through the cross-cuts or branch adits into the main tunnel, and thence out to the dumps or mills, as shown in the cut.



METHODS OF LOWERING ORE.

After the completion of the Sutro Tunnel the ore may be sent down to the tunnel level into bins and cars by means of shutes as shown in the right-hand illustration; or it may be lowered in cars, E, placed on a cage with rope, D, attached, reaching to the *surface*, which is regulated by a brake, B, controlled by one man, as shown on the left hand. The ore lowered from above in one compartment may be made to hoist men or timbers to any level above in another compartment of the shaft, and also from below the tunnel to its level.



FIRE IN YELLOW JACKET MINE.

At this fire forty-two miners lost their lives; had the Sutro Tunnel been completed and connected with this shaft the men would have escaped unharmed, as illustrated in the right-hand cut.

For the safety of miners in case of fire or accident, the system of adits would of course be invaluable. The upward current of air would carry the flames and smoke out through the shaft, while the miners could be lowered, or climb by ladders, into the connecting branches, from which escape through the main tunnel would be easy. (See preceding page.)

Such, in brief, was the scheme Mr. Sutro proposed to the mining companies of the Comstock, and as this scheme is now approaching realization, it will be interesting to recur to a few facts illustrating the magnitude, construction and history of this enterprise.

The tunnel commences at the town of Sutro, laid out at the entrance of the tunnel upon the land purchased from the United States, in the valley of the Carson River, about three and a half miles below Dayton, and one and a half miles from the river. It enters the mountains at an elevation of about 150 feet above the river bed, and has a course nearly W.N.W., reaching the Comstock Lode about in the centre of the Savage ground. The grade of the tunnel is for the most part three inches in 100 feet. A section of it first constructed had but one inch in 100 feet, but this being found insufficient to carry off the water, was afterwards changed.

Work upon the tunnel was begun on the 19th of October, 1869; but as only about fifteen men were employed at first, it progressed slowly, not over 460 feet having been made up to January 1st, 1870. During the latter year Mr. Sutro was at times actively superintending the work, and at other times employed in increasing subscriptions to the enterprise, the work accomplished that year being 1,290 feet. In December, 1870, on the petition of Mr. Sutro, Congress authorized the appointment of a commission to make inquiry into the cost and utility of the work and report upon the same. The President appointed on this commission, Major-General H. G. Wright, Major-General J. G. Foster and Professor W. Newcomb. In the Summer of 1871, these Commissioners visited and examined the tunnel and the mines of the Comstock Lode. Their report, though not so complete as was expected, was yet a valuable document. They found the proposed work to be entirely feasible, estimated the cost at \$4,500,000, and the time necessary to complete it at three or four years—less, if machinery were employed; giving it as their opinion that the Comstock Lode was a true fissure vein, extending down into the earth indefinitely. They added, that the mines would be worked as deep as mechanical means would allow, and that the amount of low-grade ore in the lode which cannot be advantageously worked on account of the expense, to be of almost unlimited extent.

In 1871, Mr. Sutro was successful in making such financial arrangements abroad as enabled him to prosecute the work more rapidly than he had before been able to do. The working force was increased, machinery was purchased, and active operations began on a more thorough and extensive plan. Four vertical shafts were located along the tunnel line in November of that year. Shaft No. 1 is located 4,915 feet from the mouth of the tunnel, its depth to the tunnel grade being 522 feet. The work of sinking was commenced here (as on tall he shafts) early in January, 1871, the tunnel level having been reached in this



VIEW OF HOISTING WORKS AT SHAFT NO. 1, SUTRO TUNNEL.

shaft on the 1st of July, 1873. Drifts east and west were started from the bottom of this shaft, the former having been extended and in good time connected with the tunnel header. Water had been more or less troublesome in this shaft, and work on it had been suspended for two months, preparatory to completion of pumps and excavation of pump stations. The pumps used in this shaft and in Shaft No. 2 were Allison & Bannan's double-acting cataract steam pumps. These pumps were quite extensively used in Pennsylvania, and even in England, but none had yet been tried in Nevada. They were considered simpler, cheaper, and less liable to get out of order than the Cornish pumps. They weighed ten tons each, their steam cylinders were 20 by 72 inches, and their discharge pipes 10 inches, and they were capable of lifting the water from station to station 300 feet apart. They were found to be very effective pumps, capable of dealing with any flow of water that could be encountered, and from No. 1 shaft the two pumps discharged over 3,000,000 gallons in a month.

Shaft No. 2. This shaft is located 9,065 feet from the tunnel entrance, and its depth



VIEW OF HOISTING WORKS AT SHAFT NO. 2, SUTRO TUNNEL.

to the tunnel grade is 1,041 feet. Begun at about the same time as Shaft No. 1, sinking was prosecuted without interruption till August 1st, 1872, when work was stopped to prepare for pump stations, and to place the pumps in position. The shaft had then been sunk 600 feet. Two pump stations were excavated, the pumps put in place, the water soon lowered, and the work of sinking was again begun on the 4th of December, 1872. Sinking was again intermitted from the middle of March to the 9th of October, 1873, having reached at that time a depth of 734 feet. It then proceeded without interruption until the tunnel level was reached, on the 18th of April, 1874. Drifting east and west was begun May 9th, 1874, and 171 feet were excavated in the east drift and 170 feet in the west drift, when, on June 26th, a large and unexpected body of water was encountered in the west drift, which poured in with such force and in such volume that the miners were obliged to fly for their lives, and the shafts and drifts had to be abandoned. In less than a month, not only the drifts but the shaft were filled with water to the top. Such was the end of Shaft No. 2, though not of the water which was encountered in the tunnel later, and will be referred to there.

Shaft No. 3 (see next page) is located 13,545 feet from the tunnel entrance, and its depth to the tunnel level is 1,361 feet. This shaft was abandoned when completed to a depth of 456 feet, on account of the constant influx of water, which could not be overcome except at an immense cost and after a long period of time, when it was probable that the tunnel itself would have passed beyond it.

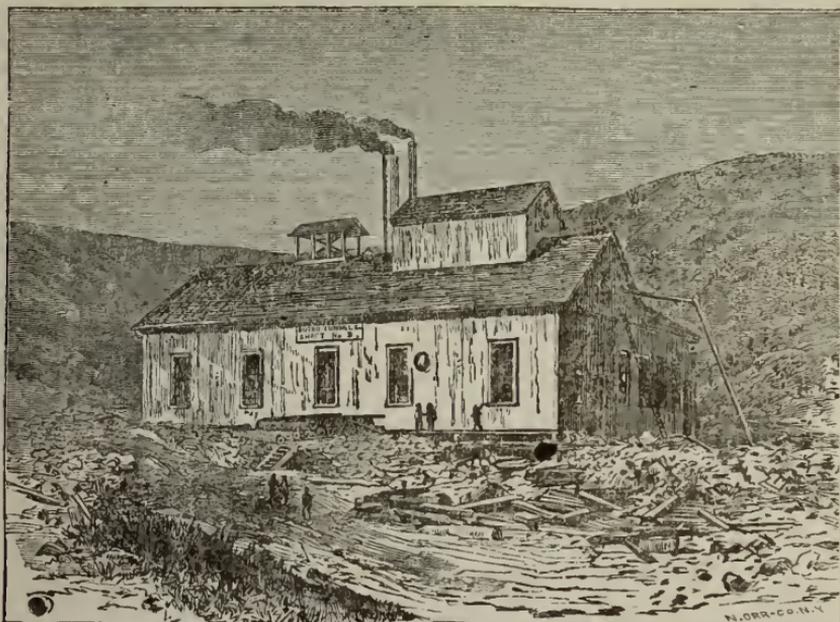
Shaft No. 4 (see next page) is 17,695 feet from the entrance, with a depth of 1,485 feet. This shaft was also abandoned, for the same causes as in the case of Shaft No. 3, when a depth of 674 feet had been attained.

In addition to these four shafts, a small air-shaft, 211 feet in depth, had been sunk, 2,250

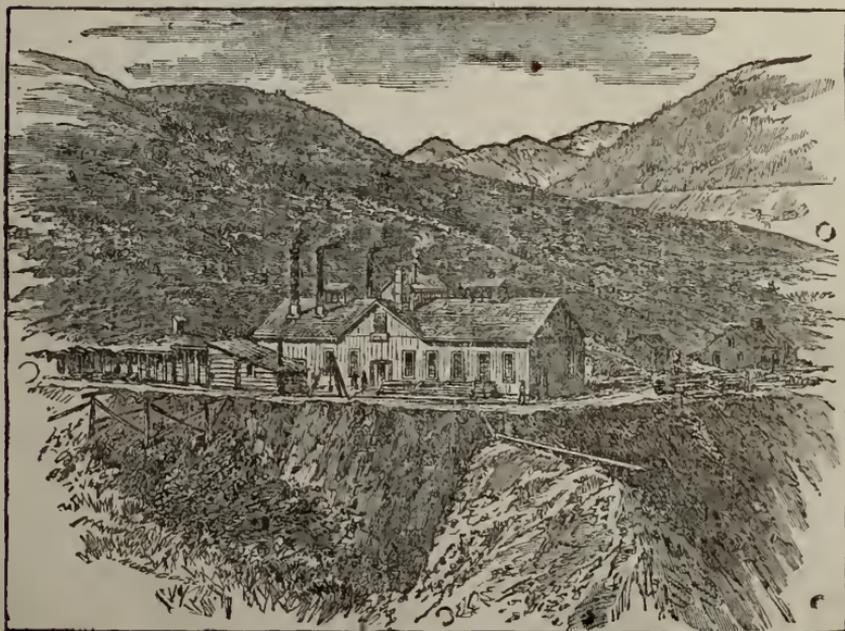
feet from the mouth. This air-shaft was begun May 27th, 1872, and completed the 12th of July following.

It will now be necessary to return to the history of the tunnel.

In the year 1871 the progress made was 915 feet, an average per month of $76\frac{1}{2}$ feet, and the total length of the tunnel at the close of the year was 2,665 feet.



VIEW OF HOISTING WORKS AT SHAFT NO. 3, SUTRO TUNNEL.



VIEW OF HOISTING WORKS AT SHAFT NO. 4, SUTRO TUNNEL.

In 1872, the advance was from 2,665 to 3,480 feet, a total of 815 feet, and an average monthly progress of $67\frac{1}{2}$ feet.

In 1873, the tunnel advanced to 5,399 feet, a total of 1,919 feet. This includes the 655 feet which had been made in the east and west drifts from Shaft No. 1, connection with which was made by the tunnel header October 27th of this year. Exclusive of these 655 feet, there was an average monthly progress of 105 4-12 feet.

In 1874, the progress began to improve, owing to the introduction of the Barleigh drill. One of these drills was started April 25th; on June 22d three additional drills were put in, and on August 7th two more—making six in all. These drills were run by compressed air, supplied by a powerful Compressor located at Shaft No. 1. This Compressor was manufactured by the Société John Cockrill, of Seraing, Belgium, and was purchased there by Mr. Sutro, who preferred the heavier European machinery to the American, which is smaller and lighter, and consequently more liable to repairs and breakage than the other. This Compressor ran with great smoothness and regularity, and with scarcely a single stoppage for repairs. The progress made during this year was 2,680 feet, or an average per month of 223 4-12 feet, bringing the header to a point 8,079 feet from the mouth. The greatest progress ever made in a single month was made in December of this year—the extraordinary run of 417 feet, nearly 13 feet a day.

During the year 1875, the average progress per month was 310 8-12 feet, the total distance run 3,728 feet, and the total length of tunnel at the end of the year was 11,807 feet. One of the most interesting incidents of the year, and one not unaccompanied by danger, was the tapping of the enormous body of water which has already been mentioned as having burst into the west drift from Shaft No. 2. This water was now a chamber of 341 feet long, 8 feet by 12 in dimensions, besides filling a shaft 5 feet by 10, and over 1,000 feet high. On the 9th of March, a hole 100 feet long was bored by diamond drill from the face of the tunnel header, to allow the water to discharge. Upon tapping the body of water, the stream burst forth with tremendous force. Fragments of timber, rock and debris were soon forced into it, and the hole had to be bored again. Again the water burst out with such force as to shoot the drill-rod out into the tunnel; but gradually the water lowered in the shaft, and in a week's time progress was resumed in the header. Some instances of extraordinary progress occurred during this year; as for example the run from July 22d to August 8th, 279 feet!—about $16\frac{1}{2}$ feet per day for 17 days consecutively!

On the 13th of August of this year the Compressor at Shaft No. 1 was closed down, and the power has been ever since that date supplied from a very powerful Compressor built at Kalk, near Deutz, on the Rhine, by the Humboldt Machine Company, and located at Shaft No. 2. This Compressor is a powerful double compressor, and has given great satisfaction.

In the year 1876, the tunnel advanced from 11,807 to 15,477 feet, a total progress of 3,670 feet, and an average per month of 305 10-12 feet.

At the close of 1877, the total distance made was 18,607 feet, the progress for the year 3,130 feet, and the average per month 260 10-12 feet. This decline in the rate of progress was due to the exceedingly difficult character of the ground encountered. Soft, slippery and swelling, it was not only exceedingly difficult to pass through, but was also dangerous to work. In many places the clay, after being cut through and exposed to the air, swelled so as to displace the railroad track, and to break the stoutest timbers like reeds. The most constant watchfulness was required to prevent accidents. Timbers were replaced again and again, and a gang of men kept continually at work easing up the clay behind them, and driving in lagging to give them additional strength. The tunnel was timbered up to the face itself, and frequently lagging was driven ahead of the drift to prevent accidents. Consequently very light blasts had to be used; sometimes even no powder could be fired, for fear of knocking down the timbers. Considering the character of the ground encountered, the average progress must be considered remarkably good. Two drills were also taken off in April, and the work was continued with only four drills for the rest of the year.

1878.—The progress during the present year has been of a lower average still than that of last year, or 235 $\frac{1}{2}$ feet per month to September 1st, with the same difficulties to encounter as those of the previous year, and the additional inconveniences of heat and bad air, which have latterly become very oppressive. Up to the present writing, September 1st, the total length of the tunnel is 20,489 feet, which brings it very close to its objective and natural terminus, the west wall of the Comstock Lode, the syenite of Mt. Davidson, and at this point work on the main tunnel has been discontinued.

On the 8th of July, about half-past 10 at night, a connection was made with the east drift, on the 1,640 foot level of the Savage Mine, at a point 20,018 feet from the mouth of the tunnel. The draft of air was immediate, rushing in from the tunnel mouth and upward through the Savage shaft with great force. Since the exhaustion of the great body of heated and poisoned air which had been pent up in the tunnel and in the lower drifts of the Savage Mine for so many years, the air has cooled, and has ventilated and purified these underground workings in a very satisfactory manner. It is stated that the thermometer on the 2,000 foot level of the Savage Mine, which had previously stood at 120°, now rises to only 90°. Thus the first benefit from the tunnel project is already realized, though as yet only just begun. An immediate

result of the improvement in the air of the tunnel header was seen in the increased progress which was made immediately subsequent to the connection.

A few details of the work may prove interesting. The average progress has been given year by year since the beginning of the work, but in the early years details of work accomplished were not kept, apparently, as fully as would have been desirable. But in 1875, Mr. Sutro arranged an outline form of Reports, which has been in use ever since then, giving all the important details of the work, and from them we compile a resumé which can be conveniently followed, in the following table :

Year.	Total distance Dec. 31. Feet.	Progress for the year. Feet.	Average per month. Feet.	Average temperature at Header of		Monthly average flow of water, miner's inches.	Average monthly consumption of Giant Powder.	Average number of car-loads of rock removed monthly two tons each.	Holes drilled each month. Average		Drills sharp-ened monthly Average
				Air.	Water.				Depth. Feet.	No.	
1869 (fm Oct 19)	460										
1870.....	1,750	1,290	107½								
1871.....	2,605	915	76½								
1872.....	3,480	815	67 11-12								
1873.....	5,399	1,919	105 4-12*								
1874.....	8,079	2,680	223 4-12	72½°		9½					
1875.....	11,807	3,728	3108-12	82½°	81°	51½	3,240½	2,086	8,619	1,232	1,720
1876.....	15,477	3,670	305 10-12	85°	86°	132½	3,584½	2,124½	8,162	1,085½	2,571
1877.....	18,607	3,130	260 10-12	92°	93°	86½	2,533½	1,726	6,122½	822	1,528½
1878 (to Sept. 1)	20,439	1,882	235 3-12	95°	105°	About 1,235,000 gallons per day.	1,772½	1,719½	4,907½	648	1,182

This table of details is the more valuable in that it is brought up to the close of the work on the main tunnel.

The branch tunnels, north and south, along the line of the lode, are yet to be begun ; but this will not be unnecessarily delayed. But the first thing to be considered after ventilation is drainage ; and in order to receive the water of the Comstock Lode through the tunnel it will be necessary to excavate and build a covered drain along its whole length. The water in some of the mines now stands at a temperature of 150 to 160 degrees, and if the water were allowed to flow through the tunnel, cooling rapidly as the strong current of air passed over it, life would be endangered from the steam thus generated. No work could be done under these circumstances. The drain can be commenced, however, at an infinite number of places, and in that way quickly completed. It will be a permanent part of the tunnel, and will consequently be substantially built.

The adjacent mines are already beginning to look anxiously forward for the completion of this great work. Its advantages and benefits are quickly appreciated now that they are close at hand.

The Julia Company has recently entered into a contract with the Sutro Tunnel Company, looking to the speedy construction of a branch from the main tunnel to the shaft of their mine. This connection, which is exactly in accordance with the original scheme of the projector, will save to the Julia company the cost of heavy and expensive pumping and hoisting works, besides thoroughly cross-cutting their ground in the direction from which it comes. The surveys for this branch have already been made and the work upon it actually begun. Its initial point is distant 19,716 feet from the mouth. The distance to be run to connect with the Julia shaft is 1,400 feet, and it is expected that this connection will be made by about the 1st of January next. This branch will be of the same dimensions as the main tunnel, 8 feet in height by 10 feet in width. It will be extended after passing the Julia Mine southerly to Gold Hill and Gold Cañon ; while another branch will diverge in the neighborhood of the Belcher Mine towards American Flat. The north lateral branch will be commenced as soon as a full under-

* This monthly average is from number of feet made, exclusive of 655 feet made in east and west drifts from Shaft No. 1.

† The largest flow was in September and October of this year, amounting to 231 and 244 miners' inches respectively.

‡ For eight months. ¶ For five months.

standing is arrived at with the Bonanza and other mines. The Julia Mine, however, will be the first mine to derive all the advantages from the Sutro Tunnel in drainage, ventilation, transportation, cheaper milling and reduced cost for supplies, such as fire-wood, timber and other materials. By means of this connection, also, the Sutro Tunnel procures an outlet at Virginia City, with full railroad facilities from the Carson River for the transportation of freight and passengers.

Such is an outline of the history of the tunnel, its object, benefits, and the work done upon it. It could not well be given in a less space, and one of these days there may be a history of the enterprise written, much fuller in detail and incident.

MINES AND MILLING.

The U. S. Law regulating Mining Claims.—The Formation of Mining Incorporations and Opening of Mines.—Shafts, winzes, inclines, drifts, crosscuts, upraises, stopes, and manner of timbering them all.—Compressed Air and its uses.—Ventilation—Water and Pumps—How Ores are Milled.

Inasmuch as this work is calculated to supply a want long felt, not only on the coast but in the States and Europe, where it will be perused by many who know nothing of our mining laws, this chapter on the general subject cannot be considered out of place. There are, moreover, very many of the citizens on the coast who have never yet posted themselves in regard to the manner of making locations, who do not wish to pay \$4 for the law book containing the desired information. All such will be interested in the following copy of the United States Mining Laws, approved May 10, 1872:

An Act to Promote the Development of the Mining Resources of the United States.

Be it enacted by the Senate and the House of Representatives of the United States of America, in Congress assembled: That all valuable mineral deposits of lands belonging to the United States, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase, by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners, in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States.

SECTION 2. That mining claims upon veins and lodes of quartz or other rock in place, bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits heretofore located, shall be governed as to length along the vein or lode by the customs, regulations, and laws in force at the date of their location. A mining claim located after the passage of this act, whether located by one or more persons, may equal, but shall not exceed, one thousand five hundred feet in length along the vein or lode; but no location of a mining claim shall be made until the discovery of the vein or lode within the limits of the claim located. No claim shall extend more than three hundred feet on each side of the middle of the vein at the surface, nor shall any claim be limited by any mining regulations to less than twenty-five feet on each side of the middle of the vein at the surface, except where adverse rights existing at the passage of this act shall render such limitation necessary. The end lines of each claim shall be parallel to each other.

SEC. 3. That the locators of all mining locations heretofore made, or which shall hereafter be made, on any mineral vein, lode, or ledge, situated on the public domain, their heirs and assigns, where no adverse claim exists at the passage of this act, so long as they comply with the laws of the United States, and the State, territorial, and local regulations not in conflict with said laws of the United States governing their possessory title, shall have the exclusive right of possession and enjoyment of all the surface included within the lines of their locations, and of all veins, lodes, and ledges throughout their entire depth, the top or apex of which lies inside of such surface lines extended downward vertically, although such veins, lodes, or ledges may so far depart from a perpendicular in their course downward as to extend outside the vertical side lines of said surface locations: *Provided*, That their right of possession to such outside parts of such veins or ledges shall be confined to such portions thereof as lie between vertical planes drawn downward as aforesaid, through the end lines of their locations, so continued in their own direction that such planes will intersect such exterior parts of said veins or ledges: *And provided, further*, That nothing in this section shall authorize the locator or possessor of a vein or lode which extends in its downward course beyond the vertical lines of his claim to enter upon the surface of a claim owned or possessed by another.

SEC. 4. That where a tunnel is run for the development of a vein or lode, or for the discovery of mines, the owners of such tunnel shall have the right of possession of all veins or lodes within three thousand feet from the face of such tunnel on the line thereof, not previously known to exist, discovered in such tunnel, to the same extent as if discovered from the surface; and locations on the line of such tunnel of veins or lodes not appearing on the surface, made by other parties after the commencement of the tunnel, and while the same is being prosecuted with reasonable diligence, shall be invalid; but failure to prosecute the work on the tunnel for six months shall be considered as an abandonment of the right to all undiscovered veins on the line of said tunnel.

SEC. 5. That the miners of each mining district may make rules and regulations not in conflict with the laws of the United States, or with the laws of the State or Territory in which the district is situated, governing the location, manner of recording, amount of work necessary to hold possession of a mining claim, subject to the following requirements: The location must be distinctly marked on the ground, so that its boundaries can be readily traced. All records of mining claims hereafter made shall contain the name or names of the locators, the date of the location, and such a description of the claim or claims located by reference to some natural object or permanent monument as will identify the claim. On each claim located after the passage of this act, and until a patent shall

have been issued therefor, not less than one hundred dollars' worth of labor shall be performed or improvements made during each year. On all claims located prior to the passage of this act, ten dollars' worth of labor shall be performed or improvements made each year for each one hundred feet in length along the vein until a patent shall have been issued therefor; but where such claims are held in common, such expenditure may be made upon any one claim; and upon a failure to comply with these conditions, the claim or mine upon which such failure occurred shall be open to relocation in the same manner as if no location of the same had ever been made: *Provided*, That the original locators, their heirs, assigns, or legal representatives, have not resumed work upon the claim after such failure and before such location. Upon the failure of any one of several co-owners to contribute his proportion of the expenditures required by this act, the co-owners who have performed the labor or made the improvements, may, at the expiration of the year, give such delinquent co-owner personal notice in writing or notice by publication in the newspaper published nearest the claim, for at least once a week for ninety days, and if at the expiration of ninety days after such notice in writing or by publication, such delinquent should fail or refuse to contribute his proportion to comply with this act, his interest in the claim shall become the property of his co-owners, who have made the required expenditures.

SEC. 6. That a patent for any land claimed and located for valuable deposits, may be obtained in the following manner: Any person, association, or corporation, authorized to locate a claim under this act, having claimed and located a piece of land for such purposes, who has, or have, complied with the terms of this act, may file in the proper land office an application for a patent, under oath, showing such compliance, together with a plat and field notes of the claim or claims in common, made by or under the direction of the United States Surveyor-General, showing accurately the boundaries of the claim or claims, which shall be distinctly marked by monuments on the ground, and shall post a copy of such plat, together with a notice of such application for a patent, in a conspicuous place on the land embraced in such plat previous to the filing of the application for a patent, and shall file an affidavit of at least two persons, that such notice has been duly posted as aforesaid, and shall file a copy of said notice in such land office, and shall thereupon be entitled to a patent for said land in the manner following: The Register of the land office, upon the filing of such application, plat, field notes, notices, and affidavits, shall publish a notice that such application has been made, for the period of sixty days, in a newspaper to be by him designated as published nearest to said claim; and he shall also post such notice in his office for the same period. The claimant, at the time of filing this application, or at any time thereafter, within the sixty days of publication, shall file with the Register a certificate of the United States Surveyor-General that five hundred dollars' worth of labor has been expended or improvements made upon the claim by himself or grantors; that the plat is correct, with such further description by such reference to natural objects or permanent monuments as shall identify the claim, and furnish an accurate description, to be incorporated in the patent. At the expiration of the sixty days of publication, the claimant shall file his affidavit showing that the plat and notice have been posted in a conspicuous place on the claim during said period of publication. If no adverse claim shall have been filed with the Register and the Receiver of the proper Land Office, at the expiration of the sixty days of publication, it shall be assumed that the applicant is entitled to a patent upon the payment to the proper officer of five dollars per acre, and that no adverse claim exists; and thereafter no objection from third parties to the issuance of a patent shall be heard, except it be shown that the applicant has failed to comply with this act.

SEC. 7. That where an adverse claim shall be filed during the period of publication, it shall be upon the oath of the person or persons making the same, and shall show the nature, boundaries, and extent of such adverse claim; and all proceedings, except the publication of notice and making and filing of the affidavit thereof, shall be stayed until the controversy shall have been settled or decided by a court of competent jurisdiction, or the adverse claim waived. It shall be the duty of the adverse claimant, within thirty days after filing his claim, to commence proceedings in a court of competent jurisdiction, to determine the question of the right of possession, and prosecute the same with reasonable diligence to final judgment; and a failure so to do shall be a waiver to his adverse claim. After such judgment shall have been rendered, the party entitled to the possession of the claim, or any portion thereof, may, without giving further notice, file a certified copy of the judgment-roll with the Register of the land office, together with the certificate of the Surveyor-General that the requisite amount of labor has been expended, or improvements made thereon, and the description required in other cases, and shall pay to the Receiver five dollars per acre for his claim, together with the proper fees, whereupon the whole proceedings and the judgment-roll shall be certified by the Register to the Commissioner of the General Land Office, and a patent shall issue thereon for the claim, or such portion thereof as the applicant shall appear, from the decision of the court to rightly possess. If it shall appear from the decision of the court, that several parties are entitled to separate and different portions of the claim, each party may pay for his portion of the claim, with the proper fees, and file the certificate and description by the Surveyor General, whereupon the Register shall certify the proceedings and judgment-roll to the Commissioner of the General Land Office, as in the preceding case, and patents shall issue to the several parties according to their respective rights. Proofs of citizenship under this act, or the acts of July twenty-sixth, eighteen hundred and sixty-six, and July ninth, eighteen hundred and seventy, in the case of an individual, may consist of his own affidavit thereof, and in case of an association of persons unincorporated, of the affidavit of their authorized agent, made on his own knowledge or upon information and belief; and in case of a corporation organized under the laws of the United States, or of any State or Territory of the United States, by the filing of a certified copy of their charter or certificate of incorporation; and nothing herein contained shall be construed to prevent the alienation of the title conveyed by a patent for a mining claim to any person whatever.

SEC. 8. That the description of vein or lode claims, claims upon unsurveyed lands, shall designate the location of the claim with reference to the lines of the public surveys, but need not conform therewith; but where a patent shall be issued as aforesaid for claims upon unsurveyed lands, the

Surveyor-General, in extending the surveys, shall adjust the same to the boundaries of such patented claim, according to the plat or description thereof, but so as in no case to interfere with or change the location of any such patented claim.

Sec. 9. That sections one, two, three, four and six of an act entitled "An act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July twenty-sixth, eighteen hundred and sixty-six, are hereby repealed, but such repeal shall not affect existing rights. Applications for patents for mining claims now pending may be prosecuted to a final decision in the General Land Office; but in such cases where adverse rights are not affected thereby, patents may issue in pursuance of the provisions of this act; and all patents for mining claims heretofore issued under the act of July twenty-sixth, eighteen hundred and sixty-six, shall convey all the rights and privileges conferred by this act where no adverse rights exist at the time of the passage of this act.

Sec. 10. That the act entitled "An act to amend an act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July ninth, eighteen hundred and seventy, shall be and remain in full force, except as to the proceedings to obtain a patent, which shall be similar to the proceedings prescribed by sections six and seven of this act for obtaining patents to veins or lode claims; but where said placer claims shall be upon surveyed lands, and conform to legal subdivisions, no further survey or plat shall be required, and all placer mining claims hereafter located, shall conform as near as practicable with the United States system of public land surveys, and the rectangular subdivisions of such surveys, and no such location shall include more than twenty acres for each individual claimant, but where placer claims cannot be conformed to legal subdivisions, survey and plat shall be made as on unsurveyed lands: *Provided*, That proceedings now pending may be prosecuted to their final determination under existing laws; but the provisions of this act, when not in conflict with existing laws, shall apply to such cases: *And provided also*, That where by the segregation of mineral land in any legal subdivision, a quantity of agricultural land less than forty acres remains, said fractional portion of agricultural land may be entered by any party qualified by law, for homestead or pre-emption purposes.

Sec. 11. That where the same person, association, or corporation, is in possession of a placer claim, and also a vein or lode included within the boundaries thereof, application shall be made for a patent for the placer claim, with the statement that it includes such vein or lode, and in such case (subject to the provisions of this act and the act entitled "An act to amend an act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July ninth, eighteen hundred and seventy) a patent shall issue for the placer claim, including such vein or lode, upon the payment of five dollars per acre for such vein or lode claim, and twenty-five feet of surface on each side thereof. The remainder of the placer claim, or any placer claim not embracing any vein or lode claim, shall be paid for at the rate of two dollars and fifty cents per acre, together with all costs of proceedings; and where a vein or lode, such as is described in the section of this act, is known to exist within the boundaries of a placer claim, an application for a patent for such placer claim, which does not include an application for the vein or lode claim, shall be construed as a conclusive declaration that the claimant of the placer claim has no right of possession of the vein or lode claim; but where the existence of a vein or lode in a placer claim is not known, a patent for the placer claim shall convey all valuable minerals and other deposits within the boundaries thereof.

Sec. 12. That the Surveyor-General of the United States may appoint in each land district containing mineral lands as many competent surveyors as shall apply for appointment to survey mining claims. The expenses of the survey of vein or lode claims, and the survey and subdivisions of placer claims into smaller quantities than one hundred and sixty acres, together with the cost of publication of notices, shall be paid by the applicants, and they shall be at liberty to obtain the same at the most reasonable rates, and they shall also be at liberty to employ any United States Deputy Surveyor to make the survey. The Commissioner of the General Land Office shall also have power to establish the maximum charges for surveys and publication of notices under this act; and, in case of excessive charges for publication, he may designate any newspaper published in a land district where mines are situated, for the publication of mining notices in such district, and fix the rates to be charged by such paper; and, to the end that the Commissioner may be fully informed on the subject, each applicant shall file with the Register a sworn statement of all charges and fees paid by said applicant for publication and surveys, together with all fees and money paid the Register and the Receiver of the Land Office, which statement shall be transmitted, with the other papers in the case, to the Commissioner of the General Land Office. The fees of the Register and the Receiver shall be five dollars each for filling and acting upon each application for patent or adverse claim filed, and they shall be allowed the amount fixed by law for reducing testimony to writing, when done in the land office, such fees and allowances to be paid by the respective parties; and no other fees shall be charged by them in such cases. Nothing in this act shall be construed to enlarge or affect the rights of either party in regard to any property in controversy at the time of the passage of this act, or of the act entitled "An act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July twenty-sixth, eighteen hundred and sixty-six, nor shall this act affect any right acquired under said act; and nothing in this act shall be construed to repeal, impair, or in any way affect the provisions of the act entitled "An act granting to A. Sutro the right of way and other privileges to aid in the construction of a draining and exploring tunnel to the Comstock Lode, in the State of Nevada," approved July twenty-fifth, eighteen hundred and sixty-six.

Sec. 13. That all affidavits required to be made under this act, or the act of which it is amendatory, may be verified before any officer authorized to administer oaths within the land district where the claims may be situated, and all testimony and proofs may be taken before any such officer, and when duly certified by the officer taking the same, shall have the same force and effect as if taken before the Register and Receiver of the land office. In cases of contest as to the mineral or agricultural character of land, the testimony and proofs may be taken as herein provided, on

personal notice of at least ten days to the opposing party; or if said party cannot be found, then by publication of at least once a week for thirty days in a newspaper to be designated by the Register of the land office as published nearest to the location of such land; and the Register shall require proof that such notice has been given.

SEC. 14. That where two or more veins intersect or cross each other, priority of title shall govern, and such prior location shall be entitled to all ore or mineral contained within the space of intersection: *Provided, however,* That the subsequent location shall have the right of way through said space of intersection for the purposes of the convenient working of said mine: *And provided, also,* that where two or more veins unite, the oldest or prior location shall take the vein below the point of union, including all the space of intersection.

SEC. 15. That where non-mineral land, not contiguous to the vein or lode, is used or occupied by the proprietor of such vein or lode for mining or milling purposes, such non-adjacent surface ground may be embraced and included in an application for a patent for such vein or lode, and the same may be patented therewith, subject to the same preliminary requirements as to survey and notice as are applicable under this act to veins or lodes: *Provided,* That no location hereafter made of such non-adjacent land shall exceed five acres, and payment for the same must be made at the same rate as fixed by this act for the superficies of the lode. The owner of a quartz mill or reduction works, not owning a mine in connection therewith, may also receive a patent for his mill site, as provided in this section.

SEC. 16. That all acts, and parts of acts, inconsistent herewith are hereby repealed; *Provided,* That nothing contained in this act shall be construed to impair, in any way, rights or interests in mining property acquired under existing laws.

The prospector having found what he believes to be a mineral lode, proceeds to have it surveyed, sticks, stakes, posts and records his notices, and in all respects conforms to the foregoing law. The next step to be taken is to develop the claim. If he is able to do so alone, or if he prefers to prospect the location with a view of determining more definitely its value before disposing of any part thereof, a shaft, or an incline, or a tunnel, is commenced, with the intention of reaching and opening up the ledge below the line of cropping on which locations are usually made. Sooner or later, however, the time comes for the incorporation of a mining company. This is done under the law of the State where the principal place of business is to be. Most companies operating on the Comstock, and, in fact, on the coast, have been organized in San Francisco, under the laws of the State of California. A certified copy of the articles of incorporation, filed in the office of the County Recorder of the county where the claim lies, completes the formalities required.

Claims are usually prospected and finally opened up through either a shaft or tunnel. In sinking, the dirt is shoveled, or rock blasted out, usually for the first hundred feet, and raised to the surface by a double-cranked windlass and a bucket. Should water be encountered, it is bailed out in the same way. The next step is to procure hoisting machinery. Usually a double-cylindrical portable or locomotive engine, with reel for the winding and unwinding of the cable, is put in position. This, or a donkey engine, having been placed for hoisting out the debris, the work proceeds as before. If the shaft be a permanent working shaft, it usually consists of two, three, or four compartments, four feet by five feet, and, in some instances, five feet by six feet. These shafts are timbered up as sunk, by square framed timbers, in sets, each set extending five feet in depth. The sides are then made solid by plank, or lagging. If the double-cylindrical engine is used, this may be continued down 1,200 to 1,500 feet, without other machinery, unless water is struck in greater quantities than can be bailed out by the bucket, barrel, or bailing tank. Usually cages, with cars for receiving the rock excavated, are used after the first few hundred feet are gained. These cages are provided with safeties, so arranged that if the cable should break, the safeties would catch into the guides of scantling running up and down the shaft, and prevent any disaster. These safeties are capable of supporting many tons weight.

A winze is a connection made between two levels of a mine, and only differs from a shaft in not coming to the surface. It is sunk in the same manner. Sometimes it is commenced on a lower level and excavated upwards; it is then called an upraise. A drift differs from a tunnel as a winze does from a shaft, and is usually run to or along the sides of the ledges. Crosscuts are drifts run across the ledges. Stations, are excavations from the shaft from which the drifts are run. An incline is a shaft or winze following the pitch of the ledge. Inclines and winzes are timbered up like shafts; drifts and crosscuts are usually timbered on the sides and overhead; the distance of the sets apart is determined by the nature of the ground run through; if it is a spongy or soft formation the sets are very close together—the object being in using all timbers to prevent caves. Many places in hard solid rock need no timbers whatever. Ores are excavated through stopes. As fast as the excavations are made sets of heavy, square timbers are put in to prevent caves and stay the ore-breasts; these are necessarily very strong and thoroughly braced with timbers running diagonally across each set, and sometimes the space is almost filled solid with timbers; after the stopes are closed waste rock is dumped in and the space entirely filled. Stopping is done by floors one above the other, with stairs for the workmen to ascend, and with chutes down which the ore is thrown till the lower floor is reached, where it is received into cars, run to the cages, and hoisted to the surface.

Wherever blasting is required the work of drilling can be greatly facilitated by using the Burleigh or Ingersoll drills, which are driven by steam or compressed air. These drills are used in almost all the old mines which have steam hoisting works; the steam is used to run air-compressors, from which the compressed air is conducted in tubes to the required level; air engines are also run in this manner, and hoisting and other machinery driven thereby, as well as small pumps to raise the water up to the tanks which are reached by the large pump from the surface. The air thus introduced and used as a motive power to drive these drills and machinery answers a double purpose, as it furnishes a motive power for the machinery and is then consumed by the miners. There are also various other ways of cooling the mines; air from the surface is forced down by blowers; water blasts are arranged to create currents of air; and now an experiment is being tried by exhausting the

send air from below to induce fresh air down the shaft, and in that manner produce ventilation. Hence it is natural for the warm air to rise this seems the more feasible plan.

The great principle of the mine is water. An idea of the expense which is incurred to get rid of this water may be obtained from statistics given in connection with some of the principal mines, and especially the great California shaft of the Chollar Mine and other mines. No machinery would be a first-rate power, or materials strong enough to lift the water of the mines the whole distance at once, as it is raised part way, raised in tanks, and then again elevated till the surface is reached. It has been found most economical to place these tanks 200 feet apart, so that to raise water from the depth of 2000 feet it is usually pumped over ten times. There are in fact ten pumps, placed 200 feet each in the other, and all running at the same time and making their strokes together, and by the same pump rod. Pump rods are fast depending all others on the Comstock. To enable the miners to work when there is water in considerable quantities running into the shaft, an additional suction pipe is extended down from the pump immediately above; this is wound out rope to prevent being injured by the blasts. Sometimes the lower part of this suction pipe is composed of iron tube, perforated so as to admit the water, and so thick and heavy as to stand the explosion of powder and the force of the flying rock without injury. Of course the general use of copper or black powder where is so much water as is used in the mine is out of the question. Haggaly, and explosives as the Hercules and Giant Powder are not affected by water, and hence they are used exclusively in the mine.

The process of opening up mines and obtaining the ores having been thus imperfectly given, it remains to follow the ore through the mill till the product is produced. Although the process of crushing gold-bearing quartz is much simpler than that of reducing silver ores, one description will be sufficient to give the reader a general idea of the subject. It being simply provided that the amalgamation of gold is carried on by causing the pulp, as fast as produced by the stamps to flow in a thin sheet over quicksilver, the minute particles of gold being taken up thereby, and the amalgamation being complete on the platform, instead of being effected by the tedious process heretofore mentioned in what is to follow. The rock is wet crushed, in both instances, by being subjected to the stamps. These stamps are usually of 600 pounds weight; but the California mill is deriving very great and satisfactory results from an increase of weight. These stamps are raised by a revolving gear, acting in front of a cylinder on bar of the stamp, which at the same time turns the stamp partially round each stroke. The weight of the stamp gives the blow, which is received by the rock, and upon a bed placed on the battery bed below. The rock is either shoveled under the stamps or fed by rollers. The latter method is preferable, because more economical, and because there is distributed more evenly the work or done in any other manner. Of course, the wear of the stamp and the rollers is great; therefore, the face of the stamp is separate and can be readily replaced. Steel shoes and cones are at present rapidly coming into use, and are found much preferable to those cast-iron forms used.

The pulp passes, from under the stamps, through screens, into distributing chutes, which convey it to the settling tanks. From the tanks it is shovelled out upon the platform. In front of the pans. These pans in the more approved methods, where steam is used for a motive power, have steam bottoms, and are arranged so as to admit live steam into the pulp or under the bottom. These pans are covered with the pulp, and quickly set in according to the richness of the ore. Here the whole mass is kept in motion till thoroughly mingled, when it is drawn off into settlers, three generally being one of these to each pair of pans. Here the stirring process is continued till the amalgam settles, the top is drawn off into agitators, stirred up and settled again, and thence into the assays. From the settlers, the amalgam is put into strainers, which allow the excess of quicksilver and all foreign substances, except the amalgam, to pass through. The amalgam is then taken to the retort room, and heated, the quicksilver evaporating in fumes, which pass through a pipe surrounded by cold water, where it is condensed into its original form, and taken back to the pans to be used over and over again. After the quicksilver escapes, the crude bullion which remains is taken to the assay office, melted, cast in bars, assayed, its degrees of fineness stamped upon it, and its value. It is now ready for market. Not even by the process above sketched is all the value taken from the pulp. What remains is carried by the water used in crushing and amalgamating, over hundreds of feet of distance, where the tailings are collected. These are of sufficient value to be again taken up and submitted to the usual process of amalgamation. Besides the foregoing ordinary process of reducing low ores, like those of the Comstock, there are a great many processes, which are attracting the attention of mining men, and those especially interested in the reduction of base and refractory ores. Chief among these are the dry process of Almirante Paul, and what is known as the Keyer process, more particular mention of which will be found elsewhere.

PROVISIONS OF THE STATE CODE.

Art. 245. Private corporations may be formed by the voluntary association of any five or more persons in the manner prescribed in this article. A majority of such persons must be residents of this State.

Art. 246. Private corporations may be formed for any purpose for which individuals may lawfully associate themselves.

Art. 250. Any corporation existing on the first day of January, one thousand eight hundred and seventy-three, formed under the laws of this State, and still existing, which has not already elected its directors or officers, under the provisions of this Code applicable thereto, may, at any time hereafter, make such election by the unanimous vote of all its directors, or such election may be made at any annual meeting of the stockholders, or members, or at any meeting called by the directors expressly for considering the subject, if voted by stockholders representing a majority of the capital stock, or by a majority of the members, or may be made by the directors upon the written

consent of that number of such stockholders or members. A certificate of the action of the directors, signed by them and their secretary, when the election is made by their unanimous vote, or upon the written consent of the stockholders or members, or a certificate of the proceedings of the meeting of the stockholders or members, when such election is made at any such meeting, signed by the chairman and secretary of the meeting, and a majority of the directors, must be filed in the office of the clerk of the county where the original articles of incorporation are filed and a certified copy thereof must be filed in the office of the secretary of state; and thereafter the corporation shall continue its existence under the provisions of this Code which are applicable thereto, and shall possess all the rights and powers, and be subject to all the obligations, restrictions, and limitations prescribed thereby.

SEC. 290. Articles of incorporation must be prepared, setting forth: First, the name of the corporation. Second, the purpose for which it is formed. Third, the place where its principal business is to be transacted. Fourth, the term for which it is to exist, not exceeding fifty years. Fifth, the number of its directors or trustees, and the names and residence of those who are appointed for the first year; *provided*, at any time during the existence of the corporation, the number of the directors may be increased, in corporations for profit, by a majority of the stockholders of the corporation, to any number not exceeding eleven, who must be members of the corporation, whereupon a certificate, stating the number of directors, must be filed, as provided for in section two hundred and ninety-six, for the filing of the original articles of incorporation. Sixth, the amount of its capital stock, and the number of shares into which it is divided. Seventh, if there is a capital stock, the amount actually subscribed, and by whom.

SEC. 295. Before the secretary of State issues to any such corporation a certificate of the filing of articles of incorporation, there must be filed in his office an affidavit of the president, secretary, or treasurer named in the articles, that the required amount of the capital stock thereof has been actually subscribed, and ten per cent. thereof actually paid to a treasurer for the benefit of the corporation.

SEC. 299. No corporation hereafter formed under the provisions of this chapter shall purchase, locate, or hold property in any county of this State, without filing a certified copy of the certificate of its articles of incorporation in the office of the county clerk of the county in which such property is situated, within sixty days after such purchase or location is made; and every corporation now in existence must, within ninety days after the passage of this act, file a certified copy of the certificate of its articles of incorporation, as provided in this section; and a certified copy of such copy shall, as evidence, have the same force and effect as a certified copy of the original. Any corporation failing to comply with the provisions of this section shall not maintain or defend any action or proceeding in relation to such property.

SEC. 301. Every corporation formed under this title must, within one month after filing articles of incorporation, adopt a Code of by-laws for its government not inconsistent with the Constitution and laws of this State. The assent of stockholders representing a majority of all the subscribed capital stock, or of a majority of the members, if there be no capital stock, is necessary to adopt by-laws, if they are adopted at a meeting called for that purpose; and in the event of such meeting being called, two weeks' notice of the same by advertisement in some newspaper published in the county in which the principal place of business of the corporation is located, or if none is published therein, then in a paper published in an adjoining county, must be given by order of the acting president. The written assent of the holders of two thirds of the stock, or of two thirds of the members, if there be no capital stock, shall be effectual to adopt a code of by-laws without a meeting for that purpose.

SEC. 307. All elections must be by ballot, and every stockholder shall have the right to vote in person or by proxy the number of shares standing in his name, as provided in section three hundred and twelve of this Code, for as many persons as there are directors to be elected, or to cumulate said shares and give one candidate as many votes as the number of directors multiplied by the number of his shares of stock shall equal, or to distribute them on the same principle among as many candidates as he shall think fit. In corporations having no capital stock, each member of the corporation may cast as many votes for one director as there are directors to be elected, or may distribute the same among any or all of the candidates. In either case, the directors receiving the highest number of votes shall be declared elected.

SEC. 309. The directors of corporations must not make dividends, except for the surplus profits arising from the business thereof; nor must they divide, withdraw, or pay to the stockholders, or any of them, any part of the capital stock; nor must they create debts beyond their subscribed capital stock, or reduce or increase the capital stock, except as hereinafter specially provided. For a violation of the provisions of this section, the directors under whose administration the same may have happened (except those who may have caused their dissent therefrom to be entered at large on the minutes of the directors at the time, or were not present when the same did happen) are, in their individual and private capacity, jointly and severally liable to the corporation, and to the creditors thereof, in the event of its dissolution, to the full amount of the capital stock so divided, withdrawn, paid out, or reduced, or debt contracted; and no statute of limitations is a bar to any suit against such directors for any sums for which they are made liable by this section. There may, however, be a division and distribution of the capital stock of any corporation which remains after the payment of all its debts, upon its dissolution or the expiration of its term of existence.

SEC. 310. No director shall be removed from office, unless by a vote of two thirds of the members, or of stockholders holding two thirds of the capital stock, at a general meeting held after previous notice of the time and place, and of the intention to propose such removal. Meetings of stockholders for this purpose may be called by the president, or by a majority of the directors, or by members or stockholders holding at least one half of the votes. Such calls must be in writing, and addressed to the secretary, who must thereupon give notice of the time, place, and object of the meeting, and by whose order it is called. If the secretary refuse to give the notice, or if there is none, the call may be addressed directly to the members or stockholders, and he served as a notice, in

which case it must specify the time and place of meeting. The notice must be given in the manner provided in section 301 of this title, unless other express provision has been made therefor in the by-laws. In case of removal, the vacancy may be filled by election at the same meeting.

SEC. 312. At all elections or votes had for any purpose there must be a majority of the subscribed capital stock, or of the members, represented, either in person or by proxy in writing. Every person acting therein, in person or by proxy or representative, must be a member thereof or a *bona fide* stockholder, having stock in his own name on the stock books of the corporation at least ten days prior to the election. Any vote or election had other than in accordance with the provisions of this article is voidable at the instance of absent or any stockholders or members, and may be set aside by petition to the District Court of the county where the same was held. Any regular or called meeting of the stockholders or members may adjourn from day to day, or from time to time, if for any reason there is not present a majority of the subscribed stock or members or no election had—such adjournment and the reasons thereof being recorded in the journal of proceedings of the board of directors.

SEC. 316. Any officer of a corporation who wilfully gives a certificate, or wilfully makes an official report, public notice, or entry in any of the records or books of the corporation, concerning the corporation or its business, which is false in any material representation, shall be liable for all the damages resulting therefrom to any person injured thereby; and if two or more officers unite or participate in the commission of any of the acts herein designated, they shall be jointly and severally liable.

SEC. 322. Each stockholder of a corporation is individually and personally liable for such portions of its debts and liabilities as the amount of stock or shares owned by him bears to the whole of the subscribed capital stock or shares of the corporation, and for a like proportion only of each debt or claim against the corporation. Any creditor of the corporation may institute joint or several actions against any of its stockholders, for the proportion of his claim payable by each, and in such action the court must ascertain the proportion of the claim or debt for which each defendant is liable, and a several judgment must be rendered against each, in conformity therewith. If the stockholder pays his proportion of any debt due from the corporation, incurred while he was such stockholder, he is relieved from any further personal liability for such debt, and if an action has been brought against him upon such debt, it shall be dismissed, as to him, upon his paying the costs, or such proportion thereof as may be properly chargeable against him. The liability of each stockholder is determined by the amount of stock or shares owned by him at the time the debt or liability was incurred; and such liability is not released by any subsequent transfer of stock. The term stockholder, as used in this section, shall apply not only to such persons as appear by the books of the corporation to be such, but also to every equitable owner of stock, although the same appear on the books in the name of another; and also to every person who has advanced the installments or purchase-money of stock in the name of the minor, so long as the latter remains a minor; and also to every guardian, or other trustee, who voluntarily invests any trust funds in the stock. Trust funds in the hands of a guardian, or trustee, shall not be liable under the provisions of this section, by reason of any such investment; nor shall the person for whose benefit the investment is made be responsible in respect to the stock until he becomes competent and able to control the same; but the responsibility of the guardian or trustee making the investment shall continue until that period. Stock held as collateral security, or by a trustee, or in any other representative capacity, does not make the holder thereof a stockholder within the meaning of this section, except in the cases above mentioned, so as to charge him with any proportion of the debts or liabilities of the corporation; but the pledgor, or person or estate represented, is to be deemed the stockholder, as respects such liability. In corporations having no capital stock, each member is individually and personally liable for his proportion of its debts and liabilities, and similar actions may be brought against him, either alone or jointly with other members, to enforce such liability, as by this section may be brought against one or more stockholders, and similar judgments may be rendered. The liability of each stockholder of a corporation formed under the laws of any other State or Territory of the United States, or of any foreign country, and doing business within this State, shall be the same as the liability of a stockholder of a corporation created under the Constitution and laws of this State.

SEC. 324. Whenever the capital stock of any corporation is divided into shares, and certificates therefor are issued, such shares of stock are personal property, and may be transferred by indorsement by the signature of the proprietor, or his attorney or legal representative, and delivery of the certificate; but such transfer is not valid, except between the parties thereto, until the same is so entered upon the books of the corporation as to show the names of the parties by and to whom transferred, the number or designation of the shares, and the date of the transfer.

SEC. 325. Shares of stock in corporations held or owned by a married woman may be transferred by her, her agent, or attorney, without the signature of her husband, in the same manner as if such married woman were a *femme sole*. All dividends payable upon any shares of stock of a corporation held by a married woman may be paid to such married woman, her agent or attorney, in the same manner as if she were unmarried, and it is not necessary for her husband to join in a receipt therefor; and any proxy or power given by a married woman, touching any shares of stock of any corporation owned by her, is valid and binding without the signature of her husband, the same as if she were unmarried.

SEC. 332. No one assessment must exceed ten per cent. of the amount of the capital stock named in the articles of incorporation, except in the cases in this section otherwise provided for as follows: If the whole capital of a corporation has not been paid up, and the corporation is unable to meet its liabilities or to satisfy the claims of its creditors, the assessment may be for the full amount unpaid upon the capital stock; or if a less amount is sufficient, then it may be for such a percentage as will raise the amount.

SEC. 333. No assessment must be levied while any portion of a previous one remains unpaid unless the power of the corporation has been exercised in accordance with the provisions of this

article for the purpose of collecting such previous assessment. The collection of the previous assessment has been enjoined.

Sec. 334. Every order levying an assessment must specify the amount thereof, when, to whom, and where payable; fix a day, subsequent to the full term of publication of the assessment notice, on which the unpaid assessments shall be delinquent, not less than thirty nor more than sixty days from the time of making the order levying the assessment; and a day for the sale of delinquent stock, not less than fifteen nor more than sixty days from the day the stock is declared delinquent.

Sec. 335. Upon the making of the order, the secretary shall cause to be published a notice thereof, in the following form:

(Name of corporation in full. Location of principal place of business.) Notice is hereby given, that at a meeting of the directors, held on the (date), an assessment of (amount) per share was levied upon the capital stock of the corporation, payable (when, to whom, and where). Any stock upon which this assessment shall remain unpaid on the day (fixed) will be delinquent and advertised for sale at public auction, and, unless payment is made before, will be sold on the (day appointed), to pay the delinquent assessment, together with costs of advertising and expenses of sale.

(Signature of secretary, with location of office.)

Sec. 336. The notice must be personally served upon each stockholder, or, in lieu of personal service, must be sent through the mail, addressed to each stockholder at his place of residence, if known, and if not known at the place where the principal office of the corporation is situated, and be published once a week, for four successive weeks, in some newspaper of general circulation and devoted to the publication of general news, published at the place designated in the articles of incorporation as the principal place of business, and also in some newspaper published in the county in which the works of the corporation are situated, if a paper be published therein. If the works of the corporation are not within a State or Territory of the United States, publication in a paper of this place, where they are situated is not necessary. If there be no newspaper published at the place designated as the principal place of business of the corporation, then the publication must be made in some other newspaper of the county, if there be one, and if there be none, then in a newspaper published in an adjoining county.

Sec. 337. If any portion of the assessment mentioned in the notice remains unpaid on the day specified therein for declaring the stock delinquent, the secretary must, unless otherwise ordered by the board of directors, cause to be published in the same papers in which the notice hereinbefore provided for shall have been published, a notice substantially in the following form:

(Name in full. Location of principal place of business.) NOTICE.—There is delinquent upon the following described stock, on account of assessment levied on the (date), (and assessments levied previous thereto, if any), the several amounts set opposite the names of the respective shareholders, as follows: (Names, number of certificate, number of shares, amount.) And in accordance with law (and on order of the board of directors, made, on the [date], if any such order shall have been made), so many shares of each parcel of such stock as may be necessary, will be sold, at the (particular place), on the (date), at (the hour) of such day, to pay delinquent assessments thereon, together with costs of advertising and expenses of the sale.

(Name of secretary, with location of office.)

Sec. 338. The notice must specify every certificate of stock, the number of shares it represents, and the amount due thereon, except where certificates may not have been issued to parties entitled thereto, in which case the number of shares and amount due thereon, together with the fact that the certificates for such shares have not been issued, must be stated.

Sec. 339. The notice, when published in a daily paper, must be published for ten days, excluding Sundays and holidays, previous to the day of sale. When published in a weekly paper, it must be published in each issue for two weeks previous to the day of sale. The first publication of all delinquent sales must be at least fifteen days prior to the day of sale.

Sec. 340. By the publication of the notice, the corporation acquires jurisdiction to sell and convey a perfect title to all of the stock described in the notice of sale upon which any portion of the assessment or costs of advertising remains unpaid at the hour appointed for the sale, but must sell no more of such stock than is necessary to pay the assessments due and costs of sale.

Sec. 341. On the day, at the place, and at the time appointed in the notice of sale, the secretary must, unless otherwise ordered by the directors, sell or cause to be sold at public auction, to the highest bidder for cash, so many shares of each parcel of the described stock as may be necessary to pay the assessment and charges thereon, according to the terms of sale; if payment is made before the time fixed for sale, the party paying is only required to pay the actual cost of advertising, in addition to the assessment.

Sec. 342. The person offering at such sale to pay the assessment and costs for the smallest number of shares or fraction of a share is the highest bidder, and the stock purchased must be transferred to him on the stock books of the corporation, on payment of the assessment and costs.

Sec. 343. If, at the sale of stock, no bidder offers the amount of the assessments and costs and charges due, the same may be bid in and purchased by the corporation, through the secretary, president, or any director thereof, at the amount of the assessments, costs, and charges due; and the amount of the assessments, costs, and charges must be credited as paid in full on the books of the corporation, and entry of the transfer of the stock to the corporation must be made on the books thereof. While the stock remains the property of the corporation it is not assessable, nor must any dividends be declared thereon; but all assessments and dividends must be apportioned upon the stock held by the stockholders of the corporation.

Sec. 344. All purchases of its own stock made by any corporation vest the legal title to the same in the corporation; and the stock so purchased is held subject to the control of the stockholders, who may make such disposition of the same as they deem fit, in accordance with the by-laws of the corporation or vote of a majority of all the remaining shares. Whenever any portion of the capital stock of a corporation is held by the corporation by purchase, a majority of the remaining shares is a majority of the stock for all purposes of election or voting on any question at a stockholders' meeting.

Sec. 345. The dates fixed in any notice of assessment or notice of delinquent sale, published ac-

ording to the provisions hereof, may be extended from time to time for not more than thirty days, by order of the directors, entered on the records of the corporation; but no order extending the time for the performance of any act specified in any notice is effectual unless notice of such extension or postponement is appended to and published with the notice to which the order relates.

SEC. 346. No assessment is invalidated by a failure to make publication of the notices hereinbefore provided for, nor by the non-performance of any act required in order to enforce the payment of the same; but in case of any substantial error or omission in the course of proceedings for collection, all previous proceedings, except the levying of the assessment, are void, and publication must be begun anew.

SEC. 347. No action must be sustained to recover stock sold for delinquent assessments, upon the ground of irregularity in the assessment, irregularity or defect of the notice of sale, or defect or irregularity in the sale, unless the party seeking to maintain such action first pays or tenders to the corporation, or the party holding the stock sold, the sum for which the same was sold, together with all subsequent assessments which may have been paid thereon and interest on such sums from the time they were paid; and no such action must be sustained unless the same is commenced by the filing of a complaint and the issuing of a summons thereon within six months after such sale was made.

SEC. 348. The publication of notice required by this article may be proved by the affidavit of the printer, foreman, or principal clerk of the newspaper in which the same was published; and the affidavit of the secretary or auctioneer is *prima facie* evidence of the time and place of sale, of the quantity and particular description of the stock sold, and to whom, and for what price, and of the fact of the purchase money being paid. The affidavits must be filed in the office of the corporation, and copies of the same, certified by the secretary thereof, are *prima facie* evidence of the facts therein stated. Certificates signed by the secretary, and under the seal of the corporation, are *prima facie* evidence of the contents thereof.

SEC. 349. On the day specified for declaring the stock delinquent, or at any time subsequent thereto and before the sale of the delinquent stock, the board of directors may elect to waive further proceedings under this chapter for the collection of delinquent assessments, or any part or portion thereof, and may elect to proceed by action to recover the amount of the assessment and the costs and expenses already incurred, or any part or portion thereof.

SEC. 378. In addition to the records required to be kept by the preceding section, corporations for profit must keep a book, to be known as the "Stock and Transfer Book," in which must be kept a record of all stock; the names of the stockholders, or members, alphabetically arranged; instalments paid or unpaid; assessments levied and paid or unpaid; a statement of every alienation, sale, or transfer of stock made, the date thereof, and by and to whom; and all such other records as the by-laws prescribe.

SEC. 586. Any corporation organized in this State for the purpose of mining or carrying on mining operations in or without this State, may establish and maintain agencies in other States of the United States, for the transfer and issuing of their stock; and a transfer or issue of the same at any such transfer agency, in accordance with the provisions of its by-laws, is valid and binding as fully and effectually for all purposes as if made upon the books of such corporation at its principal office within this State. The agencies must be governed by the by-laws and the directors of the corporation.

SEC. 587. All stock of any such corporation, issued at a transfer agency, must be signed by the president and secretary of the corporation, and countersigned at the time of its issue by the agent having charge of the transfer agency. No stock must be issued at a transfer agency unless the certificate of stock, in lieu of which the same is issued, is at the time surrendered for cancellation.

AN ACT TO PROTECT STOCKHOLDERS AND PERSONS DEALING WITH CORPORATIONS IN THIS STATE.

SECTION 1. Any superintendent, director, secretary, manager, agent, or other officer of any corporation formed or existing under the laws of this State, or transacting business in the same, and any person pretending or holding himself out as such superintendent, director, secretary, manager, agent, or other officer, who shall willfully subscribe, sign, indorse, verify, or otherwise assent to the publication, either generally or privately, to the stockholders or other persons dealing with such corporation or its stock, any untrue or willfully and fraudulently exaggerated report, prospectus, account, statement of operations, values, business, profits, expenditures, or prospects, or other paper or document intended to produce or give, or having a tendency to produce or give, to the shares of stock in such corporation a greater value or less apparent or market value than they really possess, or with the intention of defrauding any particular person or persons, or the public, or persons generally, shall be deemed guilty of a felony, and on conviction thereof shall be punished by imprisonment in the State prison, or a county jail, not exceeding two years, or by fine not exceeding five thousand dollars, or by both, provided that this act shall be construed to apply only to corporations whose capital stock has been or shall hereafter be listed at a Stock Board or Stock Exchange in this State, or whose shares be regularly bought and sold in the stock market of this State.

THE DISCOVERY OF GOLD IN CALIFORNIA.

Letter of Mrs. Wimmer.—Tardy Communication.—Excitement at the East and all over the Civilized World.—Rush for California.—Arrival of Pioneers.—Fortunate Miners.—Production of Gold.

On the 19th day of January, 1848, James W. Marshall, at work building a mill on the banks of the American River, for Gen. John A. Sutter, picked up in the mill race through which the water had been running, a specimen of bright yellow metal. At that time there was living at Sutter's

Fort a Mrs. Elizabeth Jane Wimmer, who had lived at the gold mines in Georgia. Anxious to know if the specimen he had found was gold, he sent it to Mrs. Wimmer to be examined. The following letter from that lady explains itself :

CAMBRIA, SAN LUIS OBISPO COUNTY, MAY 10, 1876.

EDITOR MINING REVIEW :

Dear Sir—In answer to your letter asking for information concerning the gold discovery, all I can say is that Mr. Marshall found a piece of gold, and knowing I had lived at the gold mines in Georgia, sent it to me to know what it was. As soon as I saw it I said, "This is gold; hut to satisfy them I threw it into a pot of soap I was boiling. After boiling all day the soap was set to cool. The next morning one of the work hands said to Mr. Marshall, "I heard some gold had been found." Marshall replied: "I sent something to the house, to Jane, to be tested," and that was all he knew about it. They then asked me where the piece of metal was, and I told them in the soap pot, where I had put it to show that it would not corrode. Marshall said he guessed it was eaten up by the lye; but when taken out it was bright and clean. I could relate many more interesting circumstances connected with the finding of gold, but if they were published the world over I fear they would be no benefit to me. When last in San Francisco I obtained a number of certificates certifying that the piece of gold in my possession was the first specimen discovered on the banks of the American River. I left it with the Pioneer Society, who were to pay me one thousand dollars for it; but I have not heard from them since. Very respectfully,
ELIZABETH JANE WIMMER.

This discovery, destined to mark an epoch in the world's history, took place on the 19th of January, 1848. But the news did not reach the Eastern States until the December following, when it was authoritatively announced in the President's annual message, and created an excitement scarcely excelled by the announcement of the firing upon Sumpter. The first passengers that left New York for the new El Dorado were Mr. Alfred Robinson and about twenty companions, who had already chartered the bark *John Benton* to leave them at Chagres, whence they were to cross the Isthmus and meet the steamer *California* at Panama. She had already sailed for San Francisco, *via* the Straits of Magellan. She arrived in this port on the 28th of February, 1849, more than thirteen months after the discovery of gold, so tardy was the spread of intelligence and the transit of passengers from the Eastern to the Western shore of our continent in those days. And but for the fact that a new line of steamers had just been started to carry the mails from Panama to California and Oregon, some time longer would have transpired before the gold-seekers from the East would have reached California. How wonderful the contrast of those days—only a little more than a quarter of a century since—with the present time, when news from the East, even from the far Orient, across oceans and over desert plains, makes the circuit of the earth ahead of laggard Time; when thought travels over the wires, far outstripping in its flight the tardy motion of the earth in its revolution upon its axis in twenty-four hours. But while the telegraph annihilates time and space in the transmission of intelligence, the speed attained in the transport of passengers across the continent is no less, if not even more wonderful still. Instead of the tedious trip of six months, across the plains—the shortest route to California prior to the establishment of the Panama line of Steamers—we are now started with the announcement that the passage has been made safely in eighty-three hours. If these changes, that could not have been foreseen, and which in a great measure owe their existence to the discovery of gold in California, have taken place in so short a time, what may we not reasonably anticipate in the next quarter of a century, with our present and ever-increasing yield of the precious metals?

But while the news of the gold discovery was slowly making its way across the continent, it was advancing with far more rapid strides over the broad Pacific. In every direction where supplies could be obtained for a people who had abandoned all other occupations but gold-digging, ships were speeding even to the uttermost limits of the Pacific Ocean, carrying the glad tidings of the abundance of gold in California. Adventurers came flocking from every country upon its borders. From Mexico, Central America, Peru, Chili, China, Australia and the Pacific Islands, vessels of every size, freighted with merchandise and with living souls, turned their prows toward the new El Dorado, and came pouring into the Golden Gate.

In a few months the little pueblo of Yerba Buena had become completely metamorphosed. A motley crew, the representatives of various nations, thronged the shores of this hitherto quiet little cove; while on its tranquil bosom thousands of maritime craft were anchored, from the merest cockle-shell, in which none but desperate gold-seekers would have dared to risk their lives, to ships of a thousand tons burden.

The population of the State, that at the time of the gold discovery did not exceed 14,000, had more than doubled by the first of January, 1849, and ten millions of gold had been extracted, the rocker, pan and crevice knife being the only implements employed.

Is it to be wondered that by this time the whole civilized world was astounded? Thousands of ships from all the nations of the earth, and loaded with passengers, were heading for California. After the pioneer steamship, the *California*, came the *Oregon* on the 31st day of March, with 350 passengers; and the *Panama*, with as many as could crowd on board, arrived in our bay on the 4th day of August following. The scramble for gold now began in earnest; lawyers, doctors and ministers joined in the race; and so potent was the gold infatuation, that some who had forsaken a sacred calling at home did not hesitate to seek it by presiding at the gaming table.

At this time the miners in the mines were averaging about \$25 per day, and there were many who took out small fortunes in a few months, and returned to their homes at the East. The production of gold went on increasing from year to year: forty millions in 1849, fifty millions in 1850, fifty-five millions in 1851, and in 1853 it reached its maximum, sixty-five millions.

Great improvements were annually made in the method of mining. Long toms and sluices superseded the pan and rocker. The "bars" (beds of alluvium deposited by the changing course of the stream) were first exhausted. Rivers and creeks were dammed and canals cut along their

banks, into which the streams were turned and their beds left dry, to be explored. Ditches were cut and flumes erected, to bring water to the surface diggings. As these became exhausted, or were left for Chinamen to clean up (a ruinous policy, that has retarded the prosperity of our State), the more adventurous miners were moving onward toward the Sierras, in the pursuit of more permanent fields: the blue gravel beds and the auriferous deposits worked by the hydraulic process.

THE PACIFIC COAST.

BY ALMARIN B. PAUL.

The author of the "Vestiges of Creation," long before this coast was settled by its present population, advanced the idea that on the portion of our continent lying west of the Rocky Mountains, and bordering on the Pacific ocean, would grow a people who for physical power and mental force would surpass all other portions of the globe. More than a million people are now upon this side, and although we of to-day cannot arrogate to ourselves this distinguished standard of greatness, and will leave it to those of the coming years, yet there are brains in our midst whose spreading powers have already electrified the world by their bold enterprise and successful achievements. And here I refer to Messrs. Stanford, Crocker, Huntington and Hopkins—men who, in the face of the best advice of friends to the contrary, and unaided by friendly capital in the first instance, threw their all into the venture, started, pushed, and finally completed one of the boldest feats of the age—the building of the Central Pacific Railroad—the spanning of the Sierra Nevadas, overcoming their rugged heights, and bidding defiance to mountains of almost perpetual snow. Some will say Government money built it in part. Granted, but did it not take brains of no ordinary cast, first to grasp the enterprise, secondly, to form the plan of operation, thirdly, the force, tact and capacity to draw the millions piled on millions to execute and complete it? I never travel over this line but there goes forth a throb of pleasure and appreciation for the brains that conceived and executed it. Let them rear their palaces of beauty, and amass their millions, unenvied—they are the rewards of industry and intellectual force. Not only this, but the applause of the people should be for such men, who year after year, open new fields for the laboring element of three States and one Territory, and give employment to more than a thousand white men daily. Would it not be a splendid thing for labor if we had a few more such spirits on the coast, and should such benefits not be appreciated?

Our mining enterprises, too, though we are so young in years, are equal, in stupendous machinery, purposes, depth, yield of the precious metals, and wealth of our adventurers, and will compare with any part of the mining world. Our manufactures we have built up and worked against the odds of paying the highest rewards for labor of any country on the face of the globe.

To us travelers accord the tribute of being the most independent, off-hand, decided and free thinking of communities. It is said that the ocean, whose sight sets thought free, gives freedom to the people. That we are possessed of great individuality of thought there can be no question. Some who stop not to analyze our better natures declare us an unchristian people. Free thought rides in every brain, call it what you will, but Christianity comes in charitable outpourings when suffering humanity sends forth its appeal.

This is the race of to-day; we are the fathers of the coming generation who are to fill up the demands of this seer's prophecy. Building upon the foundation and record of more than a quarter of a century, such as this coast can present from the pioneer days to the present, much certainly can be expected from the future. We have plowed the cereal grounds, made smooth the rugged mountain passes, studded the by-ways with homes, planted the vine and fig tree, and perfumed the atmosphere with the orange blossom and the rose. We have built cities, opened commerce, started schools of learning, of arts and sciences, and now bid fair, soon, by our telescope, to sweep further into the mystic expanse than ever Herschell dreamed of. Thus we of to-day have made easy the life of the coming generation. That they will be thinkers and bold operators there are evidences on every side. The capacity, brightness and individuality of the educated youth of to-day challenges the world for their equal. It is natural it should be so, reared, as they are, upon a new soil, solid and invigorated by the vivacity originating in the life, spirit and dash of the golden days gone by, all going to make up strength, boldness and intellectuality. Our worse element of youth is physical and mental force needing direction and education in the higher ideas of civilized life.

In this live, individualized, solid, vigorous, metalized spirit of the land, that is going to make the future blaze with the boldest enterprises and grandest outpourings of brain force, and which will make this coast the central point around which the civilized world will revolve, San Francisco is yet to be the peer of London, and the united power of the world. Central as we are between the great cities of the orient and the occident, and the depot of the trade and commerce of both, how can it be otherwise? It only wants time and brains to shape our destinies.

Our mountains are filled with treasure, and with more unlocked than the world scarce dreams of, which even now is filling our coffers monthly in the millions of new coined gold and silver.

The year 1900 will bring forth, in a measure, the realization of the prophecy, and then the hardy pioneers who laid the foundation of so splendid a future will be known only as the wild gold hunters of the nineteenth century.

Not in their day will these searchers after new sources of wealth—these builders of empire—be appreciated. Not in this century will they be wholly understood. Like the Spanish finders and explorers of a new world, it will require the glamour of years to soften the prejudices of the present, and insure to their memories that consideration and respect to which they are justly entitled. Their reward is in the future.

GOLD AND SILVER MINING.

BY ALMARIN B. PAUL.

It is refreshing to see gold and silver mining now assuming a respectable position among our industries, after the trudging it has had in years past, when a man was regarded as a fool to adhere to it. The press now speak of it as one of the great pursuits, and some begin to class it in point of legitimacy along-side of merchandizing and manufacturing—yes, farming. The fact is, statistics show that legitimate mining exceeds in certainty and percentage of success either of the above businesses. The New York *Herald* admits "that it gives a better showing than can be made by any other of the great industries of our country," and further says: "If we apply the test of \$4.00 per day for labor, every other industry would have been proved a total failure." This being so, why is it not a legitimate business? We of this coast are prosperous as a mining community, while the Atlantic is groaning under her financial pressure and crying for our gold.

Mining to-day, is of more importance, I may say more certain, than in the past, and from the fact that now mining is going down into the bowels of the earth not a few, but one, two, yes 3,000 feet! and the extracting of 500 to 1,000 tons of ore every 24 hours! We are getting our heads accustomed to bigger work, better machinery, and the putting of a "big" money by consolidating capital. We have learned the business, can master it and can teach the whole world the art of profitable mining.

The "trial of luck" we have had during the past twenty-five years, but more especially the past eighteen, has made a large body of Americans not only good miners, but good experts as well; and it can be said, further, that the first-class American miner is more complete in his money-making operations than the average foreigner who has been reared from childhood, in the pursuit. While the latter mines by old rules, the American miner makes a rule suited to surrounding circumstances. He can turn more short corners, and do more with less money. He soon solves the problem of profit or loss; if good, he holds and expands; if bad, he drops and tries elsewhere. His work is never so substantial; it does not "hold forever," and he never worries if it does not. He does not work for his grandchildren, but for the present, calculating his children will have the same privileges. Two men pounding at one drill does not suit his notions of economy, therefore the idea is suggested of doing the work single-handed; and, with his Hercules explosive, doubles the execution at half the expense.

The American miner, in fact, is getting tired of even single-hand drilling, and is about concluding, for the future, to stand by, "hoss" the machine, and save his muscle. He is an average mechanic, studies mechanism, and wonders how to get rid of hard work; and by his genius, in the coming future, close by, we are going to mine wholly by machinery. In fact, we can do it now, both on a large and small scale, by the universal adoption of the Burleigh, Ingersoll and Slater drills.

The same spirit which seeks expedition and cheapness in mining applies equally as strongly in milling the ore. Instead of 30 and 40 drops a minute for our stamps, as in the past, we drive them up to 90 and a 100. Instead of taking from six to eight hours on every ton of silver ore we manipulate it on the run. Instead of loading a few bars monthly, we load wagons daily. Mining with us on the Pacific Coast, is a live, bold business, and it only wants coin, vim, brains and experience to make it profitable. Mining in a very short time will enlist attention of the people of all the States. And why should it not? It has a life, a speculation, a profit, a vitality about it well suited to the American character. This life and expedition has not been equaled on the face of the globe. It is purely American, and a condition which every country is readily falling into, and which every foreigner of snap loves. There is no pursuit Americans are as well adapted to as mining, and why not more turn their attention to it? What will make greater prosperity for the whole Union than for the American people to accept mining as a vastly important and legitimate business, as having as much reward for labor, and capital, as trade, agriculture, commerce or manufacture.

We have in the Union a vast idle capital, and we have in California, Nevada, Colorado, Arizona, Montana, Oregon, Idaho, and Wyoming, mineral fields expansive enough to absorb it all and open a mart for all the unemployed labor of every State, much of which can be had merely for the locating. We have also in the United States, East, West, North and South, a large idle yet industrious population, crying for work and prosperity, and who could soon turn a ready hand to gathering these treasures, relieving their wants and enriching not only themselves but all about them. To give to mining, as a people, the attention our mineral fields will justify and the pursuit merits, in less than a quarter of a century more we could deluge the world with the precious metals.

GOLD MINING.

Effects of Gold Discovery upon Civilization.—Clipper Ships.—Steam Lines.—Prior Discovery of Gold.—Race for the Possession of California.—Placer Mines.—The Rocker.—Long Tom.—Sluices.—River-bed Mining.—Tunnel Mining.—Dead Rivers.—Hydraulic Mining.—Gold Quartz Mining.—Gold Bluff Quicksilver Mines.

Whatever may have been said of the evils that have been inflicted upon humanity by the thirst for gold, this fact stands out prominently, that just in proportion to the abundance of the precious metals, in the same ratio have the arts and sciences flourished, trade and commerce increased, the area of civilization been extended, and the comfort, intelligence and freedom of the masses augmented. "But for the discovery of gold in California," says McClellan, "more than likely San Francisco would be to-day an obscure outpost upon our western coast, Oregon

would still be a territory, Alaska still under the imperial rule of the Czar, and the great valleys of California untilled." He might have added, there would have been no railroad across the continent, and towns and villages would not have bordered the iron track. Where, but a few years since, the wild buffalo wandered undisturbed; where the war-whoop of the merciless savage struck terror to the hearts of the weary emigrant, toiling across the continent, to plant the flag and rear the altars of freedom still further towards the setting sun, is now heard the cheerful whistle of the locomotive as it rushes on over mountain and plain with the speed of the whirlwind. Happy cottagers, secure in their homes, lift up their voices and greet the welcome messenger of civilization as it speeds on in the track of "the star of empire" with its load of living freight.

The discovery of gold in California gave an impetus to commerce that resulted in giving to the world a new style of naval architecture—the American clipper ship. But for this discovery there would now have been no lines of steamers to Australia, New Zealand, Japan and China; marble palaces that they are, that rob the ocean of half its terrors. Every country bordering upon, and every island bounded by, the vast Pacific Ocean, has been benefitted, and its pace in the race of civilization accelerated by the discovery of gold in California.

It is true gold had been found in California prior to 1848; even so far back as 1510—seventy years before Sir Francis Drake made his descent upon this coast, and reported the existence of gold in California—the fact had been noted in a small volume published that year in Spain. The first discovery of "pay dirt" was found near Los Angeles in the year 1838, and these placers were profitably worked for a number of years. In 1846 Thomas O. Larkin, U. S. Consul for California, in his report to the Secretary of State, said: "There is no doubt but that gold, silver, quicksilver, copper, lead, sulphur and coal mines exist in this territory." Sixty-six days after the date of this paper, Commodore Sloat hoisted the American flag over the fort at Monterey, and took possession of the country in the name of the United States. Had he arrived but a few hours later, the flag of England would have been hoisted in place of the stars and stripes, for the British admiral had sailed from Mazatlan about the same time and on the same errand, but was beaten in the race.

Though the precious metals were known to exist previously in California, the grand epoch of the age dates from the discovery of Marshall, on the banks of the American River, and this happened just ten days before the treaty of Guadalupe Hidalgo was signed. It is difficult to avoid the impression that this discovery was delayed by the Ruler of events, until the times were ripe for its benefits to become widespread among the nations of the earth.

The first attempts at mining were made with implements of the rudest character; nor were any others needed at that time, for in many cases from fifty to one hundred dollars were taken out in one day.

Picks, pans, and shovels were first used. The pans were about the size of milk-pans, with a ledge soldered around the outside to assist in handling them. They were first filled with the auriferous dirt and sunk in the water, which flowed in over the sides; when completely saturated, the dirt was stirred, and the settling of the gold facilitated by a circular motion. The top dirt was then poured off. This was repeated until nothing but gold and black sand was left, both of which were bagged together in a small buckskin sack, and the black sand afterwards taken out with a magnet.

Some experience (but the art is easily acquired) is necessary, to prevent some of the gold from escaping, toward the close of the operation.

The rocker was brought to California from Chile. It very much resembles the old-fashioned baby-cradle with rockers. The dirt is thrown in upon a screen in one end, while the water passing over sets the gold free, which falls to the bottom, while the dirt floats off, and the stones are thrown out by hand.

The long-tom is a box, or short sluice, through which a stream of water is kept running. Into this box the dirt is thrown, which, carried down by the stream, falls upon a screen that will only permit small particles to pass through. When the gold is fine, quicksilver is sometimes used in the bottom of the screen. While the pans and rockers were mostly used on the bars convenient to the streams, the long-toms were an invention best adapted to the gulches, where water could only be had in the rainy season. But as the difficulties of securing the gold increased, the genius of the inventive Yankee was equal to the occasion. For river-bed mining, sluices were invented. These are made of boards sawed for the purpose, the bottom board being wider at one end, enabling the small end to be shipped, in forming a lap-joint; transverse cleats, called riffles, are nailed along the bottom, or other means, involving the same principle, are adopted, to save the gold. These riffles are generally charged with quicksilver, and on occasions are not "cleaned up" for weeks. These sluices are sometimes two or three hundred, and in hydraulic mining even a thousand feet long.

The beds of the rivers or creeks are mined by turning the stream in the dry season, when the water is low.

For river-bed mining, a favorable location where the tailings can be got rid of, is selected, and a dam thrown across the stream, while a canal to carry away the water is built along one bank of the river. The seepage water is taken out by means of a pump generally worked by a stream of water taken from the dam. When the space below the dam is comparatively dry, the miners wade in, encased in gum-boots impervious to water, and with shovels strip off the

top dirt, the gold being found in the clay on the bed-rock, in the crevices, and around the base of the boulders. These are raised from their beds, where too large to be moved by bars and levers, and the dirt worked out from under them and thrown into the sluices that run the entire length of the claim. The large rocks are sometimes broken up by sledges, or blasted and stacked upon one side, clear of the work.

As the miners continued their explorations up the streams toward the Sierras, it was soon discovered that the banks of the rivers grew less auriferous beyond a certain point. This led to the discovery of the Blue Gravel leads, or the beds of the dead rivers, as they have been called. In some places this gravel is found cemented, and has to be crushed with stamps, like gold quartz.

These gravel deposits were sometimes buried to the depth of thousands of feet beneath the lava of volcanic eruptions. Under these the miners were compelled to tunnel. What has been said in regard to tunneling veins, does not apply to these horizontal deposits of auriferous gravel, that could not be reached in any other manner. The propensity for tunnelling, so common in California under all circumstances, was doubtless acquired by these early examples.

The following interesting account of these wonderful deposits, is taken from Hittel's contribution to the *Overland Monthly*:

"What is a dead river?"

The simplest reply to this natural question would be, that a dead river is one which formerly existed, but exists no longer. In volcanic regions, it sometimes happens that the liquid lava, seeking the lowest ground, fills up the beds of the rivers, which die, and are replaced by water-courses running in other channels and in different directions. Those dead streams are so few and of little importance elsewhere, that as yet, I believe, no class-name has been given to them; but in California they are among the chief sources of its mineral wealth, and among the most remarkable features of its geological formation. They take us back to a remote era, before the time of Rome, of Greece, or of Egypt; far back beyond the origin of history or tradition, before our coast had taken its present shape; before the Sierra Nevada had risen to its present elevation; before Shasta, and Lassen, and Castle Peaks had poured out their lava floods; before the Sacramento River had its birth; and while, if not before, the mastodon, the elephant, the rhinoceros, the horse, the mammoth bull, the tapir, and the bison lived in the land. They are indeed among the most remarkable discoveries of the age, and among the greatest wonders of geology. They deserve some common name, and we have to choose between "extinct" and "dead." We speak of "extinct volcanoes," and of "dead languages," and, as the latter is Saxon and short, we prefer it. They have been called "old channels"; but this name does not convey the proper idea, since a channel is not necessarily a river, and an old channel is not necessarily a dead one. A dead river is a channel formerly occupied by a running stream, but now filled up with earthy or rocky matter, and is not to be confounded with a channel that is open and remains dry during the greater part of the year because of a lack of water, or that has been abandoned by the stream for a deeper channel elsewhere. A dry river-bed is not a dead river.

The dead rivers of California, so far as known, are on the western slopes of the Sierra Nevada, from five hundred to seven thousand feet above the sea. They are all auriferous, and therefore they have been sought for and examined. They have yielded probably \$300,000,000 in all; they now produce perhaps \$8,000,000 annually. They are not less interesting, therefore, to the miner than to the geologist—not less important to the statesman than to the antiquarian.

The largest dead river is known as "the Big Blue Lead," and has been traced from Little Grizzly, about latitude thirty-nine degrees, forty-five minutes, in Sierra County, to Forest Hill, about latitude thirty-eight degrees, fifty-five minutes, in Placer County, a distance of sixty-five miles. The course is south-south-east, the position about thirty miles west of, and parallel with, the main divide of the Sierra Nevada. The elevation is 5,000 feet above the sea at Little Grizzly, and 2,800 at Forest Hill, showing an average fall of thirty-three feet per mile. The live rivers of the Sierra Nevada run at right angles to the course of the range, and have cut cañons from 1,500 to 3,000 feet deep, and they are separated by ridges which are from three to six miles apart, and are as high as the cañons are deep. The Blue Lead runs across these ridges from two hundred to one thousand feet below their summits. The traveler does not see any signs of a dead river in these ridges, which are as high and have the same general appearance at the Blue Lead as at other places. I shall presently tell how the miner discovers the lead, but before coming to that I want to give you a clear idea how the dead river crosses the ridges. Take a piece of common ruled cap paper; put your pen on a line, draw it up at an angle of forty-five degrees to the second line above, then down to first line at the same angle, and so on until the line made by your pen looks like eight regular saw teeth, which are about an inch high. Consider those teeth as the ridges of the Sierra Nevada on the line of the Blue Lead in Sierra County, and the intervals between them as the cañons. Write over the first to the left, Cañon Creek; over the next, Goodyear's Creek; and over the others consecutively, North Fork of the Yuba River, Rock Creek, Oregon Ravine, Wet Ravine and Middle Yuba. Now draw a horizontal line across all the ridges a quarter of an inch from their tops. That line is the Blue Lead. The diagram made as directed, represents a perpendicular

section of the ridges and cañons of the Sierra Nevada, on the line of the Big Blue Lead in Sierra County as seen from the west.

I have said that the traveler would see no sign of a dead river in riding over the country. The ridges are as high on its line as elsewhere; the cañon sides present the same appearance. Years elapsed before the miners discovered the existence of the ancient channel. But it required only a few months for the discovery that the live rivers were very rich in gold up to a certain point; that the abundance and size of the particles increased as they ascended up to that point; and that beyond or east of that point the streams were poor. Those points on the different streams were nearly in a line. Just there the ravines on the sides of the cañons were very rich, and they were comparatively poor elsewhere. The miners followed up the ravines, washing the dirt in their beds, and the dirt where the ravines were not too steep, was a foot or two deep over the slate rock. At last, when the miners got near the top of the ridge, they found that the narrow, shallow rock-bed of the ravine suddenly disappeared, and the body of the hill was composed of gravel, which had a peculiar blue color, and part of it, a horizontal stratum about half a mile wide from east to west, and five feet thick, was very rich in gold. They looked after the metal, and paid very little attention to anything else. As the stratum ran across the ridges from north to south, the miners followed it in with adits or tunnels, and in more than one place the tunnels met; and a few years ago it was customary for footmen passing between Monticello and Excelsior to go under ground a distance of a mile rather than to climb over the hill, six hundred feet high, by a path nearly two miles long. In the same manner Forest City and Alleghany were connected by a continuous tunnel; but the timbers have rotted, the roof has fallen in, and the passage is now closed.

The auriferous deposit is gravel, mixed with boulders, clay, and sand, varying from a hundred to three hundred feet in depth; in strata, distinguished from one another by differences in color, in the size of the boulders and the gravel, and in the number and size of the particles of gold. The predominant color is bluish-gray, dark at the bottom and lighter above, with a reddish tinge in those places that have long been exposed to the air, showing the presence of iron. The material of the boulders, gravel, and sand is almost exclusively quartz. In the whole length of the river, as traced for a distance of sixty-five miles, assuming that the deposits of gravel average half a mile wide and two hundred feet deep, there were, counting in the portions which have been washed away by the live rivers, six billion six hundred and sixty million cubic yards of quartz and clay, and the quartz alone must have measured five billion cubic yards. In the live rivers, quartz forms only a small portion of the gravel.

Whence came all the quartz of the Big Blue? How did it happen that no granite, slate, porphyry, basalt, or sandstone was buried in its bed? If all the quartz veins now known in California were cleaned out to a depth of one hundred feet, they would not supply so much as is found in sixty-five miles of a river that must have run for many hundreds of miles. The gravel is all water-worn, and rounded by long attrition. It came from far north. A piece of rough quartz, while being carried five hundred miles in the fiercest of our mountain streams, would not be worn so smooth as is every pebble in the Blue Lead. And the immense size of the boulders implies a mighty current. Those in the lowest stratum average, in some places, a ton, and many are found of twenty tons. These are worn as smooth as the pebbles. They are not found scattered here and there, as though they had tumbled down from the banks of the river near the spot where they are found; but they are evenly distributed in a stratum of equal thickness across the whole bed, and for miles in length. Above that may be a stratum of boulders of half the size, and then another stratum of larger ones. The great river handled these masses of rock with as much apparent ease, and spread them out as evenly, as if they had been no larger than pigeons' eggs.

The particles of gold are larger in size, and contain more silver at the bottom than at the top. The smaller pieces are in the upper strata, and as they have a larger surface proportionately, the silver is eaten out by the sulphurous acid which is developed in the gravel by the oxidation of pyrites. If a double eagle and twenty one-dollar pieces are thrown into a solution of vitriol and left there for several weeks, the small pieces will, at the end of that time, contain a larger proportion of gold than the large one; and for a similar reason the surface placer gold is finer chemically than that obtained from the deeper strata. As a general rule, the deep gold is nine hundred fine, or is worth eighteen dollars and sixty cents per ounce, and the surface gold is nine hundred and twenty fine, and is worth nineteen dollars per ounce, in the Big Blue Lead. The gold and gravel are deposited as in live rivers. There are banks, bars, eddies, ripples, rapids and falls. There is little gold in the rapids, and much in the eddies. The richest places have contained as much as fifty dollars to the cubic yard of the lower stratum, or if the large boulders were left out of the estimate, to two or three cubic feet. The space between the boulders is filled with sand, clay and gravel, which contains the gold. In the upper strata there are from fifty cents to two dollars to the cubic yard. The bed is of slate rock, and the banks are from fifty to three hundred feet high; but there are few places where they have been examined, for nowhere has all the gravel been washed away across the channel.

But how was it possible that the bed of a large river could be filled three hundred feet deep with gravel? When the miners in 1850, 1851 and 1852 mined the live rivers of California, and took the gold from their beds, they found a deposit of gravel that did not average

more than five feet deep on the bed-rock, in streams that ran in cañons one thousand feet deep; and it is strange that the Big Blue should have filled its bed with gravel. Yet this filling up is not without an analogue in our day. Under the influence of hydraulic washing, Bear River and Yuba River, within the last fifteen years, begun to fill up with gravel, and their beds have for miles risen seventy feet or more above the levels of 1853. This gravel is auriferous, and it is deposited in strata, and the arrangement and general appearance resemble those of the Big Blue Lead. The filling up begun down in the valley, and as it ascended, the current became less rapid and lost the power to carry away the gravel. In Bear River, below Dutch Flat, the bed rises two feet per month during the chief washing season, from February to September, and in the remaining four months it falls on account of the stoppage of washing and of the winter floods, which carry away perhaps half of the accumulation of the summer.

Some persons claim that various camps or parts of dead rivers in Plumas County are on the Big Blue Lead, and others think that portions of a dead river, near Placerville, belong to the same stream. I do not accept these theories, but if they are true, the Big Blue River has been traced about one hundred and ten miles. In the northern part of Plumas County, the river is buried under deep beds of lava and basalt, and south of Placerville it is probably below the level of the live streams, and thus cannot be found by any system of miniug or mode of prospecting now in use. Even in places where it is above the level of the live streams it may be covered on the sides of the cañons by slides of rock or of barren dirt or gravel, and the miner might spend thousands of dollars in a vain search for treasures not ten feet from his drift, as many have done, and some accident, luck or perseverance afterwards proved the proximity of the rich deposit. In several cases the lead was found by calculation. The miner took his position on a hillside, on a line and on a level with other mining camps, and in a few days he found a fortune; and others have spent years working on a similar plan without success. The river must have taken bends on the north side of Rock Creek and Oregon Ravine, and twelve years' searching have not revealed the position of the bends.

But why did the Big Blue River die, and leave nothing but its gravel and its gold to tell the story of its existence and of its greatness? The main cause must have been the subsequent rise of the Sierra Nevada. Suppose that a range of mountains, seven thousand feet high, were upheaved thirty miles east of the Mississippi; that the bed of that stream were on the mountain side three thousand feet above the sea, and that thirty miles west the country maintained its present level; the result would be that the present Mississippi would soon be a dead river; it would be cut across by streams running down the mountain side, and pouring into a new Mississippi, thirty miles or more west of the present one. We know that the Sierra Nevada has been upheaved; that a large stream ran on what is now the mountain side; and that it has been succeeded by a new river farther west; and we must infer that the death of the old and the birth of the new river were caused by the upheaval.

Many of the hills crossed by the Big Blue are capped with lava or basalt, which covered much of the country from near the summit of the range to about three thousand feet above the sea. It seems, then, that the river filled its bed with gravel; the mountains began to rise, and volcanoes broke out along the divide; the lava ran down and covered the land to the line of the dead river and beyond it; the mountains rose still higher, and the waters running down their sides cut through the lava and made deep cañons, and washed away two-thirds or three-fourths of the dead river, and scattered its gold among the living waters.

The descent of thirty-three feet per mile observed between Little Grizzly and Forest Hill would make a terrific current in a stream half-a-mile wide. The Sacramento is a lively river, yet its grade is only five feet in a mile. But no ordinary current could have carried the large quartz boulders of the Big Blue Lead from distant regions, and distributed them evenly over the river bed. It is possible, however, that in the lifting up of the mountains the relative elevations have been altered, and that the present grade differs from that of the Big Blue while it was alive.

A question suggests itself whether the great dead river was the predecessor of any live stream; but to this no satisfactory answer can now be given; and it is doubtful whether time and research will ever furnish one. The Big Blue was parallel to the Sacramento, and has to a certain extent been succeeded by it; but it drained a much larger district than the Sacramento does, or the rain-fall of the country was much greater in the era of its existence. The Sacramento does not carry one-fourth of the water which ran in the Big Blue—probably not one-tenth. If we could ascertain that the quantity of rain had not altered, then we would be justified in presuming that the Columbia River, which would about fill the bed of the Big Blue; instead of turning westward at Walla-Walla, originally continued southward, until the lifting up of Shasta and Lassen, and the adjacent ridges, stopped its course, and compelled it to break through the Cascade range at the Dalles. With our present limited knowledge, we are not justified in calling the Big Blue River either the Dead Sacramento or the Dead Columbia.

Some persons have argued that the Big Blue Lead never was a river, but only a lacustrine or alluvial deposit. The theory, however, is untenable. The Big Blue Lead has all the marks which a dead river should have. It has a long course, a width nearly uniform, a course nearly straight, some bends with eddies on the inner side, a peculiar quartz unlike any found in the neighboring ridges, or in the streams to the eastward, and abundance of quartz which no place

now known to us could have supplied, and which came probably from a distant northern region, now covered with lava; water-worn gravel, which must have been carried far; flat stones pointing down stream, as a current would place them; strata of coarse and fine gravel, which must have been deposited in a stream; a uniform descending grade; the coarse particles of gold which could not have been distributed so evenly over a wide channel except in a strong current; an immense quantity of gold, which required ages to scatter through a deposit three hundred feet deep; driftwood unmistakably water-worn; trunks of trees with the butts up stream; tributary brooks and a number of other evidences which would require more space for their description and explanation than I could spare. To say that the Big Blue is not a dead river is equivalent to saying that the bones of the mastodon never belonged to a living animal, but were formed under geological influence exclusively.

If this was the only dead river in the State, the proof would be less conclusive, but there are a dozen others. One which runs southwestwardly, and may be called the Dead Brandy River, appears at La Porte, Brandy City, Camptonville and North San Juan, and is marked by the same general characteristics, save that the gravel is finer, the pebbles in upper strata being generally not larger than a pigeon's egg.

In Tuolumne and Calaveras counties we have the Dead Stanislaus or Tuolumne Table Mountain, which runs from near Silver Mountain in Alpine, to Knight's Ferry, and there disappears. It is covered by a bed of basalt, which flowed as lava from a volcano and filled up the ancient bed; and this basalt has resisted the wear of the elements, and now stands as a mountain forty miles long, a quarter of a mile wide, and eight hundred feet high, the softer adjacent slate rock having been wasted and washed away. Under this mountain lies a dead river rich in gold. A similar table mountain of basalt, covering an auriferous dead river, which I call the Dead Cherokee, after its chief mining camp, extends seventy miles from Lassen's Peak to Oroville. At Bangor, in Butte county, is a small, dead river, seventy feet below the general surface of the ground, and covered with ordinary soil and gravel. There are also dead rivers at Smartsville, Mokelumne Hill and San Andreas. The Big Blue and the Dead Brandy are distinguished by the depth of their gravel and by the absence of pebbles of eruptive origin in it; the others have either short courses or shallow deposits of gravel; and the quartz forms a much smaller percentage of the gravel. In the dead rivers at Cherokee, Bangor and Smartsville a large proportion of the boulders and pebbles is of lava and basalt, as if the streams had been formed after the commencement of the volcanic era. But different as is the material of the gravel, the fluvial origin of the deposits is similar and indubitable in all of them, when they are studied together.

High up in the recesses of the Sierra Nevada Mountains are to be found immense deposits of auriferous dirt, several hundred feet in depth. Where these beds are extensive and water plenty and convenient, these claims pay to work even though the gold present does not exceed one cent to the square foot of dirt, though most of them pay much more than that. It is necessary to have a good head of water, not less than fifty feet above the bed rock. This water is led into a small reservoir, into which it is continuously pouring. From this a hose extends to the bottom of the claim. At the end of this hose is a nozzle, tapering from eight inches at the butt to two inches at the orifice. From this the water rushes with such force that it will kill a man as quick as if struck by a bar of steel. When this stream of water is projected against the bank, the dirt or clay is loosened and carried by the current into the sluices, where it is pulverized and the gold set free by pounding against the riffles in its downward course.

Hydraulic mining may be considered the perfection of placer mining, and Americans may pride themselves with being the inventors.

When the dirt in these claims is very compact, it is sometimes blasted out. Long tunnels are run with cross-cuts at the end, in which are stored from one to two hundred kegs of powder, the tunnel filled up and the blast set off. The effect is like a young earthquake in the neighborhood, and thousands of tons of earth and gravel—the debris of ages—is torn from its long resting place, and carried by the torrents to the plains below, where, as in Bear Valley, it has submerged farms.

So much has been said of vein mining, under the head of mineral lodes and the formation of minerals, that little more remains to be told. Attention was given to gold quartz veins in this State as early as 1850. The Mexicans had located some of the richest lodes, and worked the ores in arastras, after the manner of Mexico. Some even had found rock rich enough to pay handsomely by crushing the choicest specimens in mortars. The first quartz mill was erected in 1851, at Grass Valley, where this industry has ever since been successfully prosecuted. Some of the mines in this locality have paid large fortunes to their owners. But few of them have ever been put upon the Stock Board; and under the direction and management of experienced Cornish miners, they have been economically developed by shafts following the direction of the vein, which is proved by experience to be the most economical method of working a mine whenever this plan is practicable. There are many gold quartz veins in the State that cannot be made to pay to work on account of the rebellious character of ores, caused by their combination with base metals and sulphur. It is to be hoped that we are on the eve of a revolution in metallurgical processes, that will enable all these mines to be worked at a profit.

One of the most remarkable deposits of gold in California is to be found on the Pacific Coast, extending from Trinidad, a small port near Humboldt Bay, to Crescent City. Along this shore is a high bluff of gravel drift, which most likely owes its existence to the glacial period. That it was once elevated far above the level of the sea, there is abundant evidence. It is now, however, being constantly washed away by the action of the waves. One of its peculiarities is the great abundance of black sand which may be gathered anywhere along the beach at low water, and with it, minute particles of glittering gold. There was a great rush to Gold Bluff in the early days, but the excitement soon died out, and many a flat-broke adventurer returned to curse his folly and the unlucky fate that made him the victim of designing speculators who had lured him away from a paying claim, which he had abandoned for some one else to jump, in the delusive hope of striking it richer somewhere else. This is the rock upon which thousands of '49ers have been wrecked. There are, however, yet a number of good paying claims along this beach. It has been conjectured that the richest sands were to be found some distance from the shore; and a vessel was fitted out with a diving apparatus, for the purpose of securing these golden sands, but the enterprise proved a failure.

The quicksilver mines of California are next to the gold mines in importance. Cinnabar has been found in the coast range from Trinity County to Santa Barbara. The famous New Almaden mine, in Santa Clara County, was discovered some years before the gold placers. Besides supplying the demands of California, a surplus was exported to Mexico and China for years before any other quicksilver mine was worked in this State. Rapidly as the demand for quicksilver has increased since the discovery of silver and gold in Nevada, Idaho and Montana, California has proved equal to the emergency, and has supplied the increasing demand, with an abundance left for foreign importation, so continuous and rapid have been the developments of our cinnabar ledges.

At this time, the most prolific quicksilver district is within a circle, around Mount St. Helena, whose radius does not exceed thirty miles. In this district are situated the Redington and Manhattan mines, at Knoxville, several in Pope Valley, the Great Eastern and Great Western in Lake County, and a number of others in Pine Flat and the vicinity of the Geysers. Besides these are a number of others that have not been referred to, and others that have not been developed, or even prospected, for want of capital. A number are also lying idle, owing to a cloud over the titles awaiting settlement. These are the effects of bad legislation. Many of our mining laws seem to have been framed with an eye to the division of mining profits among the legal profession.

These mercurial ores are mostly found in a matrix of silica, in some places resembling chalcedony, in others flint, but generally known among the miners as serpentine. It occurs in vast ledges, in some places two or three hundred feet wide, as at the Manhattan mine, and very frequently is traced for thirty or forty miles, as is the case with the Redington and Great Western lodes. These veins, being in the rural districts, have, many of them, been discovered and are now owned and worked by farmers, or others who know nothing about mining, and, as a natural consequence, the work is wretchedly done; while in other cases money is being wasted upon barren rocks, where there is not the remotest prospect of finding cinnabar.

MINERAL LODES.

BY CAPT. C. B. SMITH.

The origin of mineral, especially the precious metals, and the manner of their formation and deposit, is a question of vital importance to the miner, and one of the principal reasons of this is, to be able to arrive at a satisfactory solution of the probable depth or extent of mineral veins. The generally accepted theory is, that gold and silver ores are of aqueous origin; and to quote the words of Dr. Ure, in his dictionary of "Arts and Sciences," the veins or fissures in which these metals are stored have been formed "by an expansive force acting from within the earth, and subsequently filled with foreign matter, having been injected in a fluid state and afterwards slowly crystallized;" and this the Doctor thinks is confirmed by the fact, "that many lodes are largest in their under part and become progressively narrower as they approach the surface," and in support of this theory, he further says: "The large crystals of certain substances which line the walls of hollow veins have sometimes their *under surfaces* besprinkled with small crystals of sulphurets and arsenates, while their *upper surfaces* are quite smooth, suggesting the idea of a slow sublimation of these volatile metals from below, by the resident heat and their condensation upon the under forces of the crystalline bodies already cooled. This phenomenon affords a strong indication of the aqueous origin of metaliferous veins."

Unfortunately for this theory of the formation of veins or fissures, there are many lodes that grow narrower as they go deeper, and some are "pinched out" altogether, and, besides, it never seems to have occurred to the Doctor, and other advocates of this fissure theory, to inquire: What means were employed to keep these fissures or cavities in the earth extended while being filled, and during the ages upon ages, that it must have taken for the quartz and metals in the Comstock Lode—for example—to have crystallized, if only a small portion of the

contents of these veins are now removed? It is a very difficult matter to keep these cavities thus created from collapsing even by the aid of strong timbers, and these are often crushed to fragments.

That the metals now found in what we term "lodes" or "veins" once existed "in a fluid state and afterwards slowly crystalized," there cannot be a doubt; and that quartz crystals are formed from liquid, we have abundant evidence, as cavities in silicious rocks are frequently found filled with fluid silica, and the evidence is plain that the crystalization was still going on. What Dr. Ure says about the under and upper surfaces of veins, is not very clear, but the idea of crystalization and sublimation certainly seem to contradict each other. Volatile metals like sulphur and arsenic, that appear to be chemically combined with the metals, are volatilized and dissipated by heat, and the reduction of the precious metals is more or less difficult in proportion to the presence of these volatile metals.

Lately, another theory has been started to account for the presence of metals in veins, and, although it was at first treated with the most superlative contempt by the savants of Europe, it has since found advocates. The new idea is, that the metallic ores are deposited in these open fissures by the magnetic currents that pass through the earth from pole to pole, and it seems to be supported mainly by the fact that the metals are frequently found in the rock composing the walls of the veins.

This theory has the same difficulties to contend with, so far as the cavities are concerned, which alone is sufficient to condemn it, more especially if a more plausible theory can be found.

If these scientific gentlemen would examine more carefully the croppings of veins, their clay selvages, their gangues and the matrix of the metals, instead of drawing their conclusions in their laboratories from specimens of ores, they would not fall into such ridiculous errors of the origin of minerals and the mode of their formation in fissures or veins. It was well said by a German scientist, speaking of our rapid improvement in metallurgy and mining, "No wonder you improve so rapidly, for in this country brains and muscle work together."

We would ask any intelligent miner if it is not much more reasonable to suppose that all the metaliferous deposits found in the crust of the earth in what are termed lodes or veins were originally deposited in lakes or ponds upon the earth's surface, and subsequently elevated to their inclined or vertical positions by the upheaval of the mountains? Is not this confirmed by the dip of the Comstock lode? And is it not more reasonable to suppose that a portion of these deposits have been buried many thousand feet by the grinding down of the mountains by storms and glaciers during eons upon eons of ages? These ridiculous theories may have obtained with the impression, now exploded, that the earth is only six thousand years old. Any sensible person could hardly entertain for a moment the idea that the Comstock lode was even an open fissure in the crust of the earth. The clay selvege in the Comstock, was deposited after the contents of the lode was crystalized, and could only have been deposited in a horizontal position as mud is always deposited. The mind becomes paralyzed at the vain effort to attempt to grasp the vast space of time necessary to have crystalized the immense deposits of metaliferous ores and the quartz and porphyry contained in the Comstock lode. The condition of the earth in its transition from nebulae will probably forever remain a mystery, except so far as we are able to judge from the evidence found in the rocks, but everywhere we find evidence that it first crystalized, and gold and silver and silica must have crystalized together. Evidence of this is to be seen in a case of minerals standing before the door of Col. Andrews' store, the diamond merchant, in the Russ House block. There are several very interesting specimens of gold and silver embedded in quartz, one of the latter especially, showing conclusively that the silver and quartz must have formed simultaneously. Why should we doubt that these metaliferous veins were deposited in a horizontal position, when we find in our coast range evidently an aqueous formation, interstratified veins of silica and sandstone, carrying iron, copper, mercury and various other metals, including silver and gold. Iron ore is found forming in the bogs of Ireland, also in some of the mountain lakes of Switzerland. The ocean water is known to contain silver and gold. With these evidences before us, how is it possible to resist the conviction that what we now call mineral bodies were once lakes or ponds on the earth's surface and were crystalized anterior to the upheaval of our mountain ridges.

If this theory, then, is the true one, how will the evidence bear upon the Comstock Lode? May we not expect that there will be a limit to its depth, and that, finally, that depth may be reached? But it would not necessarily follow that the limit of the deposit of quartz and mineral would be reached, for the extent may be very great, and bonanzas may occur as they are now encountered in the Comstock and all other mineral deposits of the precious metals—showing that the crystalization of the mineral was generally local. It is supposed that there must be a limit below which it is impossible for miners to work, but that remains to be proved. What we want to know is facts, in regard to the formation of mineral. The question is not the condition of the fluids of the earth, when these deposits occurred, but whether or not they did occur in the manner here suggested, and were afterwards elevated in one portion and depressed and carried by the debris of volcanoes and attrition, in another, or whether there ever were cavities in the earth's crust where volatile minerals were sublimated, and silica and gold and silver crystalized.

Within a few years a deposit of argentiferous copper ore has been discovered near Molege, in Lower California. This remarkable mineral deposit extends over a large extent of country,

and is now being profitably worked. Thousand of tons of this ore are being exported annually, and but for the want of capital (difficult to be obtained for industrial purposes in that distracted and impoverished country), the product of these mines might be very greatly augmented. This deposit was discovered in the dry beds of the arroyos, where the table lands had been furrowed by the mountain torrents swelled by the annual rains.

Argentiferous deposits are by no means confined to veins. They are to be found under many different conditions. Masses of rich chlorides of silver and argentiferous galena are found imbedded in limestone formations. These are common in England, Germany, South America, Mexico—and probably the White Pine District in Nevada is another example, though in this country the prejudice in favor of fissure veins is so great that owners of mining property are loth to admit that their mine is not of this character.

A most remarkable deposit of silver, known as the *planchos de plata*, was discovered on the borders of Chihuahua and Sonora during the previous century. Thousands of miners flocked to the locality of this wonderful bonanza without providing themselves with the means of subsistence. Terrible suffering ensued; thousands perished with hunger, and many were killed by the Indians.

All knowledge of the locality of this deposit has been lost, and but for the fact that one of the blocks taken out, weighing over six hundred pounds, and which is nearly pure chloride of silver, was transported to the museum at Madrid, where it now remains, this story would most likely be treated as fabulous.

In most cases, however, silver ore is found in veins that seem to penetrate the earth's surface, and generally alloyed with other metals, some of which render its reduction extremely difficult and expensive. In some localities, native silver is found in great abundance. There are two mines of this character in Mexico—one in Morales, in the State of Sinaloa, and another in Chihuahua; the latter is owned principally by Wells, Fargo & Co., of San Francisco.

Silver-bearing veins almost invariably give indication of their presence by quartz croppings. It is true, blind leads have occasionally been struck, but oftener by accident than otherwise. A vast amount of money is annually wasted, in underground prospecting for veins, that would be more judiciously expended in developing mines already discovered.

Laboring under the delusion that important mineral discoveries have sometimes been made that gave no surface indications, novices in the art of mining are prone to undertake the development of their veins by tunneling.

It is very seldom that a mine can be advantageously worked in this manner. All those undertaken on the Comstock Lode have been a useless waste of money; neither have any of them resulted in any important discoveries. Numerous companies were formed in San Francisco to work mines in Mexico during the mining excitement that followed the discovery of the Comstock Lode.

Most of these enterprises failed, and their failure was in a great measure owing to this propensity so general among new mining superintendents for opening their mines with tunnels. These are frequently undertaken in locations where twice the distance has to be made by a tunnel that would be required to reach the same depth with a shaft. In sinking the blasting is more effectual than when tunneling. Assisted by the weight of the atmosphere, the "shots" throw better.

Sinking on the vein is always the best way of prospecting a mine, and where there is no surface indications the safest plan is to let prospecting in that locality alone. Shafts are, without doubt, the best way of working a mine. We might have learned that from the example of our Mexican neighbors, who have had centuries of experience. They never open and work their mines with tunnels, though until within a few years past they have been compelled to mine without the aid of machinery or pumps. Water became an insurmountable barrier to the Mexican miner at very moderate depths, and the ore was mostly carried to the surface in hide bags, strapped to the back of the *tanatero*. If it was not advantageous for them in the absence of machinery and pumps to work their mines by tunnels, it certainly cannot be advisable for us, who possess all the advantages of steam and machinery.

What has been said in regard to the impolicy of underground prospecting, will apply to the prospecting of barren quartz lodes, especially while there are so many undeveloped mines that give reasonable indications of profitable returns. It is well ascertained that mineral veins are not metaliferous in their whole extent. The contrary is the fact, and the barren ground vastly predominates. Millions of dollars have already been wasted in this country in these unfortunate speculations—but not alone here. In all countries during periods of great mining excitement the same causes have produced similar effects.

But while disastrous results have generally followed the attempt to find mineral where there are no surface indications of its presence, the adventurous miner who has perseveringly persisted in sinking for bonanzas at lower depths (I use this word in the sense we have given it; in the Spanish, it simply means prosperous), even far below where the pay-rock first encountered has given out, seldom fails of being rewarded for his enterprise.

The best plan, while working out one body of ore, is to be seeking for another. A miner can never do a better thing with ore than to leave it where he finds it until he needs it to put through the mill. Many valuable mining properties have been rendered valueless, and the owners ruined, by "gutting" the mines instead of prospecting them to greater depths, while

the ore taken out would have supplied the means without calling for assessments. Examples of misadventure from failing to follow this rule are frequent, and may have been repeated in the Enma mine. At any rate, it is difficult to understand how fraud could have been perpetrated in the sale of this mine, when the parties who bought it acted upon the reports of experts of their own choosing. It can be no fault of the parties who sold this property in England, if faults in the vein have been encountered since. That either this has happened, or the mine been "guttled," and no effort made to seek ore at lower depths, seems clear from the evidence.

Veins are sometimes abruptly terminated in their lineal extent by slips or slides in the strata. This may be best understood by supposing the vein has been severed by a transverse cut, and that on one side of this cut the lode has fallen down in a manner similar to the opening of a fan, and it may have fallen so low on one side that all indications of its existence are buried out of sight, and covered by the debris from the adjoining hills.

In such cases the vein is said to be "heaved" or "started," according to the direction in which the fault occurs.

Metallic veins are also frequently obstructed in their downward course by boulders of rock; these are termed a "horse." They sometimes have the appearance of having been split from the upper, and toppled over against the foot-wall. In such cases all traces of the continuation of the vein is frequently lost, the lode terminating in a *cul de sac*. There are cases, however, where the vein has been recovered by following the scam above the horse until the lode was again found. A "horse" sometimes occurs in a vein imbedded in the gangue, and completely detached from either wall.

The ore bodies in a vein do not, as a rule, follow its line of strike, but generally cross the lode at a very oblique angle. These generally commence at or near one of the walls, thin, and of low grade ore where they begin, increasing in thickness and richness as they proceed, until they finally terminate in the same manner at or near the opposite wall. They do not always extend quite across the vein, and in small veins these bonanzas frequently occupy the entire space between the walls, and in not a few instances the vein seems to have been apparently widened out for their accommodation.

The facilities we now have for working mines will probably enable us soon to determine many points regarding them, still unsettled, and also solve the problems whether or not true fissure veins ever do give out at any depth possible to work them, or if, as a rule, they become richer the deeper they penetrate.

The bonanza recently encountered in the Comstock Lode, as well as some of the most famous mines in Mexico, seem to support this theory. The conditions under which the precious metals have been formed must doubtless remain a mystery for many years to come; and when we have ascertained how the thing is done, most likely we shall be in possession of the philosopher's stone, and be able to make gold and silver to order, without digging for it in the depths of the earth; and then most probably the millennium will have come.

Limestone, in which rich deposits of chlorides of silver and argentiferous galena are frequently found, is conceded to have been the work of zoophites, which are now only found rearing their coral structures in the depths of the tropical seas. How these masses of chlorides of silver and argentiferous galena became imbedded in the solid secretions of corals, originally deposited at the bottom of the ocean, is a question that for the present must be left to conjecture.

The petrifications that are still going on in many localities may give us some clue to the formation of silica. A most singular fact in this connection is, that where wood has been petrified it is literally turned to stone—no evidence of woody fiber remaining. Cavities are often found in silicious rocks lined with quartz crystals, and partly filled with fluids, of the petrifying qualities of which wonderful stories have been told. Nothing could induce a Mexican miner to drink the contents of one of these cavities, lest he be turned to stone, as once happened to an unfortunate hombre, who, overcome with thirst, was unable to resist the temptation to quaff the crystalline fluids found filling the cavities of the rock which he was blasting. The bodies of dead animals are frequently found petrified under circumstances that prove that the silica must have been derived from the fluids in which the body had been immersed.

The silica of petrification is identical in character, if not in construction, with the silica that forms the base of the matrix of the precious metals. That both are formed simultaneously, and by the same process, there seems to be hardly a doubt. Silver and gold are found in solution in the waters of the ocean; and all are soluble by simple chemical processes. Singular mineral changes have been observed where large deposits of tailings have been left undisturbed for centuries; and that the formation of mineral may be still going on, though at a pace so slow as not to be observable, is yet possible.

Vein mining in California has, for a number of years, been steadily on the increase, extending to all parts of the various gold-bearing belts of the State, the area of placer mining having meantime been undergoing a gradual contraction; the greater portion of the gold dust realized from this branch coming now from the hydraulic washings, which require capital for their successful prosecution, and are conducted on a large scale.

THE MINERAL FIELDS OF CALIFORNIA, NEVADA, IDAHO AND ARIZONA.

REVIEW BY COUNTIES.

California.

ALAMEDA.—Coal is found in the Monte Diablo range, and at Corral Hollow.

ALPINE.—Gold, silver and copper mines are worked with some success.

AMADOR.—Its gold mines, particularly in quartz, are very rich. Near Sutter Creek is located the well known Amador or Hayward mine, one of the oldest, deepest and most productive of the quartz mines of California. The product of this mine is about \$650,000 annually. The shaft is down about 2,000 feet. Jackson was formerly rich in placer mines, but its chief dependence now is upon the quartz ledges, which are worked to good profit. Lone City, in addition to its other mining interests, has developed a splendid coal bed.

BUTTE.—One of the earliest mining counties in the State. Oroville is the principal mining town of the county. It grew into prominence during the excitement of 1855, and has so continued ever since. It is not unusual to strike good pay dirt in digging a cellar in the town or vicinity, and dead river-beds are being constantly discovered in various parts of the county. The last excitement occurred about three years ago, when the neighboring towns were nearly depopulated of Chinese by their universal rush to the mines here. The Cherokee hydraulic mines produce about \$500,000 annually.

CALAVERAS.—Gold was discovered in the vicinity of Murphy's, in 1849, and mining is still prosecuted with increasing energy, the many rich quartz lodes, deep channels of ancient glacial drift, and vast deposits of auriferous gravel, giving unlimited fields for the most extensive operations. There are also good copper mines in this county.

COLUSA.—The hills, which form the western border of the county, contain silver, quicksilver, copper, sulphur, petroleum and salt. The town of Munchville is the centre of an important quicksilver region. Among the principal mines in the district are the Abbott, Buckeye, Empire, Elgin, Manzanita, Turner, Last Chance and Yellow Jacket; none of which have, however, made any large production since the decline in the price of this metal.

DEL NORTE.—Gold is mined on the Klamath and its branches, and in the sands of the ocean beach. Rich veins of copper exist in the mountains east of Crescent City. Chromic iron ore, or chrome, highly valued as a pigment, appears in inexhaustible quantities in the Smith River valley.

EL DORADO.—Gold was discovered at Coloma, in 1848. The placer mines having been nearly exhausted, attention has been turned to deep gravel mining, and extensive canals are being constructed for hydraulic purposes. A number of rich quartz mines have also been opened. At Georgetown, the Woodside, St. Lawrence, Taylor and other companies have been working on veins of good promise.

FRESNO.—Gold mining is prosecuted to some extent. Coal and iron abound in the Monte Diablo range, and copper in the foot-hills of the Sierra. In the western portion of the county are the rich quicksilver mines of New Idria and Panoche. The New Idria company produces about 6,000 flasks of 76½ pounds each of quicksilver annually. The mines were discovered in 1855.

HUMBOLDT.—Mining limited. Petroleum has been found near the Mattole river. Good stone coal in abundance, near Garberville.

INYO.—Minerals abound in abundance, the principal being argentiferous galena, gold, copper, sulphur and tin. The principal mining districts are Darwin, Kearsage and Cerre Gorda—the latter having produced annually, for several years, over \$2,000,000 in silver and lead.

KERN.—Some very valuable quartz veins are known to exist in this county, among which are the "Bright Star," "Bella Union," and the "New World," near Havilah.

KLAMATH.—Quartz and placer mines of gold are found in many localities. The Black Bear, Klamath and Yellow Jacket quartz mines are very valuable. The first two have powerful mills of thirty-two stamps each. The vein resembles the mother lode, and is nearly one hundred feet in thickness, the ore yielding from \$10 to \$40 per ton.

LAKE.—Contains extensive deposits of sulphur and quicksilver. The Redington, Manhattan, and California mines, at Knoxville, are among the richest in the world. The other quicksilver mines of the county are also numerous and some of them valuable.

LOS ANGELES.—The mineral resources of the county are of great value. In it were found the first gold placer diggings of California, long previous to the discovery at Coloma. Along the San Gabriel and Santa Clara Rivers gold was gathered fifty years ago. At Soledad veins of gold-bearing quartz have been worked with profit. Veins of copper and other minerals are found in the San Gabriel range, and petroleum springs in the San Fernando hills. According to report some promising silver-bearing lodes have been found the past Summer in Silverado district, to the east of Anaheim.

MARIPOSA.—Lies in the great gold range of the Sierra Nevada, and is the seat of the celebrated Fremont grant. Several million dollars have been taken from this estate, with

excellent prospects for future increase. The Josephine, Pine Tree, Mt. Ophir, Princeton, Mari-
posa and other great veins, yielding ore bearing from \$8 to \$35 per ton, are being reopened,
with milling facilities reducing the cost of working to \$4.75 per ton. Important discoveries
have been made at Coulterville and Hornitos, and, altogether, the mineral resources of the
county have a favorable outlook.

MENDOCINO.—There are cinnabar deposits in this county, some of which would probably
have been worked with profit had the price of quicksilver kept up to anything like former
figures. Some placer mining has been done at Calpella the past season, and with water there
is quite an extent of diggings here that would pay fair wages.

MONO.—Placer mining was carried on at Monoville from 1860 till 1867 with good success.
In the latter year a great extent of vein deposits was discovered, followed by a large increase
of population and a violent mining excitement, during which things were so overdone that a
terrible relapse followed, bringing with it financial ruin and an almost total abandonment of
the county. After this very little was done in Mono till 1877, when the great success that
attended the working of the Standard Mine drew attention once more to this region. Pros-
pectors began to return, capital was invested, and the work of exploration having been once
more inaugurated, the immensely rich gold-bearing deposits in the Bodie Mine were brought
to light, since which this has been one of the most active mining districts on the coast.

A correspondent of the *San Francisco Post*, under date of Sept. 25, 1878, thus speaks of
the Bodie mines. For still other particulars, the reader is referred to the official report of each
mine, as published in alphabetical order in our *Minig Directory*:

"The Bodie mines are situated in a porphyry belt running nearly north and south, from
2,500 to 3,000 feet wide, and extending several miles in length. On the western portion of this
belt, there appears to be a system of parallel veins, some of them small, others of considerable
size in places, all bearing more or less gold. It is a peculiar characteristic of the ledges, that
the largest portions of them are generally the richest. On this western portion of the mineral
belt I found the Standard, Bulwer, Bodie, Tioga, Sitting Bull, and other well-known mines;
and further to the south and along the same line is the South Bulwer, the South Bodie, Mono,
Relief, Republic, Noonday North and South, Booker, and Spalding. On the eastern side of
this mineral belt, the formation differs materially. The ore carries more silver, and the forma-
tion is larger; that is to say, the vein matter is much wider, and there are large bodies of gold
in the fissure. This is particularly illustrated in the Aurora Tunnel. The Dudley Lode in
this tunnel, at the bottom of the winze, 100 feet below the tunnel, is 15 feet thick, and shows
some of the richest chloride ore found anywhere—horn-silver and free gold being plainly visible
to the naked eye in the same rock. At this point, the vein stuff is several hundred feet thick,
and in the depth promises to be a very important mine. The May Belle, Red Cloud, and other
mines, north and south, are on this silver zone, so to speak. The May Belle Mining Company
and the Aurora Tunnel and Mining Company, whose claims conflicted, have settled all their
disputes, taking in a strip of ground running north from the Red Cloud to a point seven
hundred and fifty feet north of the Aurora Tunnel, making a distance of some two thousand
four hundred feet. This ground has been deeded by the Aurora Tunnel and May Belle Com-
pany to two new companies, which have been organized for that purpose. The one is known
as the Dudley Mining Company, and the other as the May Belle Consolidated Mining Company.
The former company is the owner of the north end of the ground, commencing at a point 375
feet south of the tunnel, and includes ground on the Dudley lode. The May Belle Consolidated
Mining Company owns the ground from a point 375 feet south of the Aurora tunnel to the Red
Cloud. The May Belle is in a similar formation to that found in the Aurora tunnel, and they
are sinking a shaft. It does not follow the vein, consequently there can be no special develop-
ments till the ground is crosscut. The shaft is now down two hundred feet, and from the
formation, when the crosscut is made, it will undoubtedly develop similar ore to that found in
the Dudley claim. The Red Cloud, the adjoining mine on the south, has a shaft down four
hundred feet, but the water is so strong that they are unable to take it out from the lower level
with their present machinery. They are exploring the two hundred and fifty-foot level, while
waiting for a pump to take the water from the lower level. On the two hundred-foot level,
running north and south, they have good indications for a mine. The ledge in each direction is
about three feet thick, and promises well. Turning to the western belt, the Syndicate Company
owns a large body of ground extending twelve hundred feet east and west, and fifteen hundred
feet north and south, and are running a deep exploring tunnel, which is in some fifteen hundred
or sixteen hundred feet, and are now crosscutting, and will undoubtedly develop valuable
mines, for only a short distance intervenes between the south line of the company and the rich
mines lying south of it. Immediately south of this company are the Tioga Consolidated,
Bechtel, and Sitting Bull. The Tioga has recently opened two ledges, one supposed to be the
Standard vein. These ledges improve as depth is attained. The Bechtel is down a distance
of seven hundred feet. After leaving the three hundred, the ledge gave out, although the
fissure continued. I understand that they are now crosscutting in the bottom. Immediately
west of the Bechtel, is the Sitting Bull, which has very rich rock. The ledge is not large,
averaging from eighteen inches to two feet; but the ore is high grade, and the width of the
ledge is increasing as depth is attained. It is supposed by those most familiar with the situa-
tion, that this is the north extension of the rich ledge that is found in the Bulwer mine. The

Bulwer lies west of the Standard, and although I was not allowed to visit this mine, still, from all the reports that I could gather from miners, it is one of the finest developments in the district, a large body of ore having been shown. The Standard mine would be hard to describe. The company have a very large amount of ground, and they not only have the old Standard vein, that has been yielding so well for the last eighteen months or two years, but both veins in the Bodie extend into the Standard. This is probably the finest gold mine in the world, and those most familiar with it claim that there are years of dividends in sight. The company goes along without creating any sensation, making dollar dividends. They are sinking a shaft between the Standard works and those of the Bulwer, which is now down some seven or eight hundred feet, upon which large pumping works are to be erected. This shaft will prospect that section of the mineral belt to great depth. Immediately south of the Standard and of the Bulwer comes the Bodie, of which so much has been said, and about which there has been so much excitement. Without any previous development every one is aware that it has produced in the last two months about \$12 to the share in dividends. This was probably working the mine too fast, and not giving it a fair show, for if the same course had been pursued in this that was followed in the Standard, and the working shaft had been sunk and the mine opened, it would have undoubtedly shown years of dividends ahead and have continued to pay from \$1 to \$2 per month. The ground is little explored, but the confidence of the mining men in the mine is unabated. In fact they think much more highly of it than they did when it was selling for \$54 per share. Further developments show that it is not a pocket, but a vein. From the nature of the ground it is undoubtedly safe to assume that it will continue to develop new veins and new ore bodies similar to those found immediately north of the Standard.

"There are several claims to the west of the Bodie and in its immediate vicinity. Among these are the Riqueza, the Rustler and South Bulwer. The Riqueza appears to be located where, if the veins in the Bodie should continue in the same direction, they would pass through the ground; but that remains to be seen. The Riqueza is crosscut, and the Mono—the southern part of the Bodie that was cut off—is sinking a shaft a short distance to the east of the Riqueza, and they claim that they are in the range to be on the continuation of the Bodie vein. Time will tell. Immediately to the south of these mines—the Bodie, Riqueza and other claims that I have mentioned—comes the Relief, which is an old location, with a large ledge. Although but little has been done, still the location is a very desirable one, and the ledge shows strong six or eight feet thick, and may turn out to be another Bodie, in depth. Immediately west of this will be found the South Standard, the South Bodie, and still south of these are the California, the Republic, the North Noonday, Concordia, Noonday, Booker, and Spalding. Many of these locations have good prospects for a ledge. Some are sinking without any ledge to start with; and persons investing should be very cautious to know that the party has a ledge on which to make a location, or the location will be legally void. There are also, on the middle of the ridge—which appears to be a little too far west for one mineral belt, and too far east for the other, several locations, of which I shall speak in a future letter, and after a more thorough examination. The Rustler is now booming up, and people investing in Bodie stock should give attention to it. It is one of the oldest locations in the camp. The parties owning it are sinking rapidly, and indications are that a rich ore body will soon be discovered. To enable them to secure as soon as possible what they seek, arrangements have been made by which hoisting material will be in Bodie in a few days, after which we expect to hear of a rich strike in Rustler. The Golden Gate, formerly Ophir, is also one of those mines that we call the attention of investors to. This mine was recently disposed of to very responsible parties, and, from its location, we feel secure in giving it prominence. The parties having purchased the same no doubt knew their business, and will reap a rich harvest in the immediate future. The stock is now selling at \$1 per share. If we know anything at all, we feel certain that parties purchasing will not only not lose anything, but, on the contrary, be the fortunate possessors of a bona fide property. The Walker mine is situated near the summit, and joins Sitting Bull mine; it is one of the richest we have visited. The sinking has not been very great, present depth being only fifteen feet. From the surface and other indications, it promises to be very rich. Owing to its proximity to Sitting Bull, its value, of course, is enhanced."

MONTEREY.—Silver, gold, cinnabar, iron, marble, and limestone exist in greater or less quantities, the production of lime having especial prominence. Near the Mission San Antonia, gold placers have been worked in a small way for a number of years.

NAPA.—Important discoveries of cinnabar have given the mining interests of the county a new impetus. The Redington, Manhattan, and California quicksilver mines are located near Knoxville, in this county. The Calistoga mine (gold and silver) has a true fissure vein and some good ore. Quicksilver mines exist all over the county. Rich deposits of iron have been found at Chiles Valley.

NEVADA.—This county is chiefly mineral, the gold mines being among the most productive in the State. Through Nevada County the glacial drift is deeper, clearer and better defined than elsewhere throughout the western slope of the Sierra. Between the South and Middle Yubas extends a vast and continuous chain of grain or gravel hills, embracing the mining districts of Eureka, Moore's Flat, Woolsey Flat, North Bloomfield, Humbug, Columbia Hill, Chinney Hill,

Badger Hill, Cherokee, North San Juan, Manzanita Hill, Sweetland's, French Corral, Sucker Flat and Smartsville. The deposits of gravel in these places are from one hundred to four hundred feet in depth. It is estimated that the basin, covering an area of six miles square, near Nevada City, has produced over \$75,000,000 in gold, and the yield exceeds \$2,000,000 annually at the present time. The quartz veins, as a general thing, seem to increase in size and richness as greater depth is attained.

PLACER.—Gold mines of great value are being worked, and new developments constantly made. The principal mining districts are Dutch Flat, Gold Run, Todd's Valley, Bath, Iowa Hill, Michigan Bluff, Auburn, and Newcastle. At Dutch Flat and vicinity are numerous high ridges, having an accumulation of gravel in thickness from one hundred to three hundred feet, which are being mined by hydraulic process and underground excavation, producing several million dollars annually. Hydraulic and drift constitute the principal branches of mining here.

PLUMAS.—Gold mines are found throughout the county, and are worked with great profit. Quincy is the center of a productive mining region, and at Taylorville are quartz mills and valuable mines of gold and copper.

SACRAMENTO.—Considerable placer mining is carried on in the foot-hills, at Mormon Island, Folsom, Willow Springs, Sulky Flat, Michigan Bar, and several other places, once famous mining districts. Some quartz deposits are also being worked with profit in the vicinity of Folsom.

SAN BENITO.—The mineral resources are not fully developed, but quicksilver, as well as silver-bearing veins of undoubted wealth, have been discovered.

SAN BERNARDINO.—This county is rich in minerals, as yet but partially developed. At Holcomb and Bear Valleys placer and gold quartz mines have been worked for the past fifteen years. Gold diggings are also found on Lytte Creek. In the desert lying between the great Basin or Valley of the Colorado, and the San Gabriel and San Jacinto ranges, are situated Clarke, Amargosa, Twenty-nine Palms, and other mining districts of much promise. Tin mines are found in the Temescal range.

SAN DIEGO.—Gold was shipped from the Bay of San Diego as early as 1828, and old settlers claim it was taken out at a distance of less than forty miles from the beach. In 1859 a negro worked an arastra on a gold-bearing quartz ledge thirty-five miles northwest of the city. In 1870 placer gold was discovered about forty miles northeast of the city, and shortly afterwards a ledge was struck, the richness of the quartz creating great excitement, and the rush to the Julian mining district commenced. Banner and Julian are the principal mining towns of the county.

SAN LUIS OBISPO.—Discoveries of quicksilver have been made in the Pine Mountain region, near Cambria, where the Oceanic Mine, with a twenty-ton furnace, is producing metal, and gives evidence of great value. Cinnabar has also been met with at San Simeon.

SANTA BARBARA.—The most notable mineral deposits yet found here consists of petroleum, with vast beds of asphaltum. Some cinnabar has also been found. Some of the oil wells being sunk in this county, having reached a depth of several hundred feet, are beginning to yield with considerable abundance an excellent quality of petroleum, warranting the belief that this material will yet become a source of much wealth and profit.

SANTA CLARA.—Noted for possessing the richest quicksilver mines in the world—the New Almaden, Enriquita and Guadalupe—from which came, until recently, nearly all the quicksilver used on the coast and exported.

SHASTA.—In the eastern part of the county valuable copper mines are being successfully worked. Iron and coal mines have also been located.

SIERRA.—Resources chiefly mineral. The western slope of the county is very broken, being alternately high ridges, capped with gravel and volcanic matter, and deep cañons. In these gravel ridges are the rich gold mines that have made the county famous. From five to seven millions has been the average annual product for many years. The "Blue Lead" deposits the bear gold in the greatest quantity. The Sierra Buttes mine, near Downieville, is one of the most remarkable on the coast. The company have three mills, aggregating 86 stamps. The mine has paid the stockholders about \$250,000 annually. The Bald Mountain mine is another evidence of what energy and perseverance can accomplish. This mine was opened by a company of working miners, and in 1874 produced \$324,000. It is estimated that \$7,000,000 yet remain in the claim. Valuable iron mines have been located, the difficulty of access being the only hindrance to their successful working.

SISKIYOU.—Extensive placer mining is carried on along the Klamath, Scott and Salmon rivers; also, some quartz mining along these streams and elsewhere in the county, the "Black Bear" ranking among the best mines in the State.

SOLANO.—In a range of hills north of Suisun, rich cinnabar mines are being opened up. Coal, marble and hydraulic cement are also among the productions.

SONOMA.—The county contains gold, silver, quicksilver, chromic iron, copper, sulphur, etc. The chief mining interest centers in quicksilver, and Cinnabar District, or Pine Flat, on the northeastern border of the county, being the principal scene of operations. A large number of furnaces have been constructed for reducing these ores, and most of them were, at one

time, in active operation. Owing to the decline in the price of this metal the majority of these furnaces have done but little for the past two years.

STANISLAUS.—The placers along the principal rivers were once very productive, and are still being worked in some places with good results. There are also valuable deposits of copper in this county, though they are not being much worked at the present, owing to the low prices of that metal.

TEHAMA.—Gold is found in the Sierra Nevada, and salt and medical springs of great value exist in the Coast Range. Discoveries of quicksilver have also been made.

TRINITY.—Placers of great richness were found along the Trinity River and its branches, and were worked for a number of years with great energy and profit. Recently water from a great elevation has been introduced, and the deep gravel deposits have been attacked by the most approved system of hydraulic washing. The gold product has greatly increased. Valuable cinnabar deposits have also been opened near Trinity Center, the ores of the Altoona mine yielding the highest percentage of metal of any in the State.

TULARE.—In the high Sierra, near the border line of Inyo County, is Mineral King district, where ledges of great size exist, bearing gold, silver and lead. These ledges have not yet been sufficiently opened to test their value, their great altitude rendering them difficult of access, and the winters severe, having prevented their development. In the foot-hills are placers of limited extent, some portions of which have been worked with moderate results.

TUOLUMNE.—One of the oldest and formerly one of the most prosperous of the mining counties. The more accessible placers have now been pretty well worked out. There still remain, however, banks of hydraulic gravel, and the Pliocene channels which, with a moderate expenditure of capital, could be made to pay well. The Table Mountains, which cover the remains of these "buried rivers," are the best preserved of any in California. Quartz mining is also beginning to attract considerable attention, the Soncsby, Mouut Jefferson, and various other mines of this class, being considered very valuable properties.

VENTURA.—Placer and quartz veins are known, but the interest is not fully developed. Cinnabar has been discovered, and gypsum, potters' clay, petroleum, etc.

YOLO.—Quicksilver has been discovered in the mountain region.

YUBA.—The placer mines at Sucker Flat, Smartsville and Timbuctoo, are among the most productive of their class in the State, while quartz mines have been successfully worked at various places.

Nevada.

CHURCHILL.—Silver and gold mines have been discovered in various localities, but so far have not proved remunerative. Beds of salt and carbonate of soda, of great purity, are quite numerous.

DOUGLAS.—Mines of silver and gold exist in several localities, but few, if any, have been worked with profit.

ELKO.—Mines of silver, gold, lead and copper have been located in various parts of the county, and important mining districts have been organized and are rapidly growing. The most active and important district in the county, at the present time, is Tuscarora, in which a number of mines are being vigorously worked and considerable bullion turned out. A good deal of work is being done in the several other districts, and new discoveries of supposed value are constantly reported. There are placers in the northern part of the county worked mostly by the Chinese, who make fair wages.

ESMERALDA.—Mining for precious metals is the principal resource of the county. Silver was first discovered at Aurora, in 1860, and the district of Esmeralda formed. A large number of silver and gold-bearing veins were found, and some \$2,000,000 extracted. Columbus, Silver Peak, Palmetto, Mammoth, Volcano and Wilson are all prominent districts, rapidly developing, and silver, gold and copper are found in all. At Belleville, near Columbus, is the celebrated Northern Belle mine, whose regular dividend, disbursed monthly, is quite welcome on California street. South of Columbus are inexhaustible deposits of borate of lime. Near Silver Peak is the "Great Salt Basin," sixteen miles in length by three in breadth, covered with pure salt. After an almost entire intermission of ten or twelve years mining operations are beginning to be resumed about Aurora, where, under more thorough and systematic work, it is anticipated that valuable ore deposits will be developed.

EUREKA.—The principal mining districts are Cortez, in the northwest; and Eureka, in the eastern central part of the county. The latter is a very important mining locality, making a bullion production of about \$10,000,000 per year, ranking in this respect next to the Virginia and Gold Hill districts. Besides Eureka and the Richmond, which for several years have distinguished themselves by their large bullion productions, there are a number of other promising mines here which are beginning to yield quite freely, and with every prospect that they will soon rival the above mines in their out-put of bullion. Foremost among these are the K. K., Hamburg and Jackson, with several others having an almost equally promising future.

HUMBOLDT.—The mountain ranges of this county abound in gold and silver-bearing lodes, some of them of established value. Copper, lead, antimony and other useful metals are also found in great quantity. On the desert plains and alkali flats heavy beds of sulphur, salt and

soda occur, all which are now being extensively utilized. The precious metals are also being actively and successfully mined in several districts. Rye Patch, Star, Sierra, Winnemucca and Battle Mountain being just now the most lively and productive. At the sulphur banks in this county large quantities of this mineral are being extracted and refined by the two companies owning and operating works there. The product of these refineries finds a market in San Francisco, where it is preferred for its greater strength and purity to the imported article.

LANDER.—From '62 to '68 a great many mining districts were organized in this county, and an immense number of company locations made. Long and costly wagon transportation, the great expense of working the ores and disappointment often as to the value of the mineral deposits found, lead afterward to the almost entire abandonment of most of these districts, some of which, until recently, have remained nearly depopulated, as several still do. The town of Austin, the business center of the Reese River country, the name by which this region is generally known, is to-day and for sixteen years, has been an active mining locality, most of the bullion made in the county having been turned out here. Lately new life has been infused into some of the other camps, which stand a good chance of partially fulfilling the hopes entertained of them at the time of their first settlement.

LINCOLN.—The mines in the Ely district, of which Pioche is the business town, were discovered in 1869. The Raymond & Ely, and Meadow Valley have been the two most prolific claims here, both having been outfitted with mills and hoisting works at an early day, and since turned out considerable bullion. Both of these mines continue to be worked, the former still yielding bullion in considerable quantity. The Hillside Mine, in this county, lately furnished with reduction works, is also a property of unmistakable value. Many other claims are being developed, with good prospects, and we may reasonably hope to see some of them advanced to the rank of profitable bullion producers.

LYON.—The great Comstock ledge extends or sends off branches into this county, which, in and around Silver City, are divided up into a great many mining claims and worked extensively. Here we have the Dayton, Kossuth, Amazon and Glasgow, Daney, and many other mines on which a large amount of work has been done, and which, with greater depth, promise to become remunerative properties. At Sutro is the initial point of the Sutro Tunnel, one of the most gigantic works of the age, due notice of which will be found elsewhere in this volume. Near where the town of Dayton now stands miners washed the ground for gold long prior to the discovery of the Comstock. At this point extensive mills are located, engaged principally in the reduction of ores from the Gold Hill mines, in working tailings, etc. The mining districts of Palmyra and the town of Como are in the mountains southeast of Dayton. Copper ore in abundance is found in the Walker River country.

NYE.—The precious metals are found in the numerous mountain ranges—the Shoshone, Toiyabe, Toquima, Belmont, Hot Creek, Desert, White Pine, Eagai, Snake and Shell Creek—and important developments are constantly being made. The Philadelphia, Reveille, Troy, Twin River, Jefferson, Tybo, Union, and Mammoth, are the principal mining districts of the county, though much work has been done outside of these, with fair prospects. Belmont, the county seat, is situated in the heart of a rich silver district, discovered in 1867. In Union and Mammoth districts, discovered in 1864, and afterwards nearly deserted, some very rich mines have, within the past two years, been opened up, and all of which are now paying handsomely and in some instances quite largely.

ORMSBY.—The mineral resources of Ormsby County are just beginning to attract attention. Recent developments have demonstrated the fact that at the eastern base of the Sierra and near the town of Genoa runs an independent fissure vein of mineral-bearing quartz, which has the polar strike, eastern dip, clay walls, and all the peculiar characteristics of the Comstock Lode, being rich in also both gold and silver. The productions of this lode differ materially from the base and refractory ores of the Peavine district of Washoe, being remarkably free from sulphur and antimony, and bearing traces only of copper and enough lead to work well. A great many locations were made here in 1861, and much work afterwards done upon some of them in the shape of deep lying tunnels. As the lode failed to be reached as soon as expected, all work was suspended after having been prosecuted for a year or two, or for a less period, accordingly as the means of the several companies happened to hold out. As the conviction remains strong on the minds of many good judges that this lode ought to be thoroughly exploited, there is every probability that efforts directed to that end will be made in the early future. Near Carson City, the county seat, the North Carson mine, more fully described by us elsewhere, is situated, this being the first claim outfitted with steam-hoisting works and opened with thoroughness in this section of country.

STOREY.—In Storey County lies the great mineral heart of Nevada, the Comstock Lode. The locality abounds in gold and silver. In early days placer diggings were numerous and remunerative, and placer mining is still carried on near Virginia and Gold Hill, where hundreds of acres are being held for surface washings. There are in Storey County in the neighborhood of 500 mining locations in and around the Comstock, and a thorough examination of the section warrants the assertion that there is not one of them that has not a fair prospect of finding, sooner or later, pay ore. A description of the more important or promising of these locations is made elsewhere in this work, precluding the necessity for any further mention of them here. Prior to the discovery of the Comstock Lode placers were worked on a limited scale along the

upper part of Gold Cañon and along Six-mile Cañon, in this county, this branch of mining having also been pursued since that event in a small way about Virginia City.

WASHOE.—Until recently, the principal mining district of Washoe County was the Peavine, about eight miles north and west from Reno. This section is rich in precious metals, but the ores have proved to be very refractory, being heavily mixed with sulphur, arsenic, etc. The later and more scientific methods of reduction are however, fast overcoming the difficulties hitherto encountered, and these deposits are attracting attention. During the past year, a number of rich argentiferous lodes were discovered at a point in the northerly part of the county, near Pyramid Lake. So far as opened, these lodes give promise of permanence and richness, and, being in the hands of energetic men, they will probably be explored with diligence and completeness.

WHITE PINE.—Although this district was organized as early as 1865, the movement known as the "White Pine stampede" did not occur until three years later—having grown out of the discovery of exceedingly rich silver-bearing ore in the Eberhardt mine, on Treasure Hill, in the summer of 1868. The excitement consequent upon this discovery was one of the wildest and most disastrous of all the mining "rushes" that have taken place on this coast. Though so hurtful to many in its immediate, the ultimate consequences of this movement have been, on the whole, beneficial—having led to the early exploration of the promising mineral districts scattered over Central and Eastern Nevada. White Pine itself no longer attracts attention; but the region that it was indirectly the cause of bringing to light is being rapidly populated, and already begins to make free shipments of bullion. The most productive districts of this county are Tybo, Reveille, Cherry Creek, and Robinson—the White Pine District itself also turning out a good deal of bullion.

Idaho.

ALTURAS.—Placer and quartz mines are profitably worked, and numerous quartz mills are in operation. The first silver-bearing ledges were discovered in 1863. The mines at Roeky Bar and Atlauta have obtained considerable celebrity. The veins are both gold and silver bearing.

BOISE.—This county contains the famous Boise Basin, twenty miles in length by ten in breadth, considered the richest mining district in the Territory of Idaho. The first discovery of gold was made within two miles of the town of Centerville, in August, 1862, and the placers are still worked by hydraulic process. In addition to the alluvial deposits, rich gold and silver-bearing quartz ledges have been discovered. The Gold Hill quartz mine, in this county, has about the best record to point to of any property of the kind in the territory, having been a large, steady and profitable producer of gold for over fourteen years. This result being due not less to an efficient and otherwise superior management than to the intrinsic merits of the mine itself.

IDAHO.—Rich placer mines were discovered in 1861, at the head of Meadow Creek, one of the tributaries of the Salmon River. Since that time several valuable quartz ledges have been found, and are being worked with profit.

KOOTENAI.—Gold was discovered in this county, on the bank of the Pen d'Oreille River, in 1852, but its mineral resources are entirely undeveloped.

NEZ PERCE.—Indefinite reports of rich discoveries in the Salmon River Mountains, and the knowledge of some placer mining in the vicinity of Lewiston, is all that can be said of this county.

OWYHEE.—The mining belt contained within the limits of this county was discovered in 1863. The principal mining districts are in the vicinity of Silver City, and are designated as Ruby Hill, War Eagle, and South Mountain. The ledges are gold and silver bearing. The most noted mines among the early discoveries are the Mahogany, Silver Cord, Poorman, Ida Elmore, Pauper, War Eagle, South Chariot, Empire, Golden Chariot, Bay State, and Golconda. The discovery of the Black Jack, a very rich lode, during the past year, has served to partially revive mining in the district, work having lately been started up on several of the older claims after a long interregnum of active operations. The outlook for Owyhee is better just now than for many years past.

Arizona.

The Territory of Arizona lies in part between the Rocky Mountains and the Sierra Nevada, and is bounded by New Mexico on the east, Utah on the north in part, by Nevada on the north and west in part, and by the southern portion of California for the balance of the western line; and on the south by the Republic of Mexico. It is about 625 miles wide in both directions, and contains an area of 113,916 square miles, or 72,906,240 acres. Physically considered, Arizona consists of a series of wide plateaux, generally having a mean elevation of from 60 to 100 feet on the south-west, to from 6,000 to 7,000 on the north. These plateaux are crossed by mountain ranges, while magnificent peaks diversify the prospect. They are riven in all directions by great cañons, vast gorges, deep channels, cut by the streams and rivers which,

since the mysterious Archæan ages, have been forcing their way through this huge mass of mountain formation.

The great silver belt of Arizona, so far as yet developed, commences about forty miles south of the great bend of the Colorado, in the north-eastern part of the Territory, and extends in a line varying in width from forty to eighty miles south-easterly to the Gila River, and thence southerly to the Mexican line, in the south-eastern portion of the Territory. There is, however, a break in this line of about seventy miles to the northward of Tucson, to offset which, scattered mines and dry placers are found in the western portion of Pima County, the mineral resources of which have been but little explored. To the extreme south-eastern portion of the Territory, adjacent to the Chiricahui and Dragoon Mountains, the same remark is applicable.

The principal districts, mines, and placers located near Prescott, in Yavapai County, as reported in *Hinton's Hand-Book of Arizona*, are as follows:

HUMBUG DISTRICT.

Accidental.	Fawn.	Naiad Queen.	Silver Star.
Basin.	Fourth of July.	Omega.	Silver Vault.
Bising.	Foy.	Oneida.	Stand-by.
Black Jack.	George.	Ontario.	Swilling.
Brunson.	Georgia.	Pearl.	Taurus.
Cayuga.	Hidden Treasure.	Rescue.	Tex.
Chenango.	Highland Chief.	Robert Lee.	Tip-Top.
Clauson.	Huron.	Rodenbrng.	Tonawanda.
Cottonwood.	Inca.	Sau Carlos.	Vandyke.
Crickett.	Isabella.	Signet.	Walsh.
Eddy.	Jefferson.	Silver Chamber.	Willow.
Eladen.	McDerwin.	Silver Jacket.	

HASSAYAMPA DISTRICT.

Adel.	Davis.	Norton.	San Gunars.
Benjamin.	Empire.	Oriental.	San Miguel.
Berry.	Jedo.	Pensacola.	Senator.
Birth-day.	King Lear.	Perry.	Storm.
Crook.	Maple Gulch.	Plug Ugly.	

WEAVER DISTRICT.

Antelope.	Don Quixote.	Marcus.	Sexton.
Bonanza.			

TURKEY CREEK DISTRICT.

Archer.	Continental.	Little Joker.	Peerless.
Ariel.	Corsican.	Mammoth.	Roach.
Bashford.	Goodwip.	Masterson.	Silver Joe.
Belzora.	Grasshopper.	McCurdy.	Sunrise.
Bertie.	Hatz & C.	Miner.	Twin Eros.
Bully.	Herbert.	Morning Glory.	Trinity.
Burmeister.	Holmes.	Nevada.	White Pine.
Cole.	Jumper.	Pearl.	Zalida.
Collier.			

BRADSHAW DISTRICT.

Ballenciana.	Eclipse.	Idlewild.	Mountain Boy.
Beardsell.	Eclipse N.	Index.	Nopal.
Benton.	Gray Eagle.	Index S.	Shelton.
Blandena.	Herbert.	Mazeppa.	

BIG BUG DISTRICT.

Belle.	Clifton.	Kit Carson.	Sunrise.
Big Bug.	Dividend.	Mesa.	Ticonderoga.
Bulger.	Eugenia.	Poland.	Turkey.
Bullion.	Gen. Kautz.	Silver Belt.	Vandercbilt.
Chafford.	Gopher.	Silver Flake.	

PECK DISTRICT.

Black Warrior.	Evening Star.	Little Fraud.	Queen of Beauty.
Concord.	Jack-on-the-green.	Occident.	Silver Prince.
Doyle.	Litigant.	Peoples.	Wm. Wallace.
			Wild Pigeon.

TIGER DISTRICT.

Burton.	Grecian Bend S.	Tiger.	Tiger 3 to 6 S.
California.	Laurena.	Tiger S. 4.	Tiger 7 S.
Grecian Bend.	Thurman.	Tiger N ex.	

The principal districts, mines and placers in Pima County are as follows:

TYNDALL DISTRICT.

Abercom.	Crystal.	Khedive.	Rosaria.
Bertha.	Cochise.	Magnolia.	Saliro.
Blake.	Dora.	North Star.	Silver Star.
Bushell.	Empress.	Ophelia.	Tubac.
Braghill.	Georgia.	Pinto.	Tumacacri.

The Bushell mine, which has four old shafts—evidences of ancient workings—is a marvel in richness and beauty of ore. In a new shaft now being sunk, at a depth of twenty-four feet it displays a massive vein of high grade ore, black sulphurets, assaying as high as \$2,460 to the ton. The lode is a true fissure, with perfectly formed walls of porphyritic granite.

AZTEC DISTRICT.

Abundancia.	Inca.	La Purissima.	Saint Louis.
Almoner.	Iturbide.	Lost Mine.	San Ignacio.
Anahuac.	Jesuit.	Oro Eslampado.	San Ildefonso.
Aztec.	Joaquinata.	Plata Plata.	Sombrero.
Emma.	Josephine.	Robley.	Toltec.
Hidalgo.	Juarez.		

The St. Louis mine, which receives the junction of two immense lodes—the Empress of India and the General Craig—is a new mine, but is developing a massive vein of wonderful richness. It is also a true fissure in the same formation as the Bushell. A shaft of the same dimensions as the Bushell is being sunk on the vein, and at the depth of twenty-three feet the most satisfactory results have already been obtained. The ore is abundant, and will mill \$80 to \$100 to the ton—a better yield than the average Comstock ever furnished.

ORO BLANCO DISTRICT.

Alaska.	Louise.	Sonora.	Wyoming.
Alaska ex.	N. Carolina.	Warsaw.	Yellow Jacket.
Idaho.	Ostrich.		

SANTA RITA DISTRICT.

Bell.	Froivita.	Grossett.	San Jose.
Buenna Ventura.	Gibbons.	Mariposa.	Santa Maria.
			Sedgewick.

ARIVACA DISTRICT.

Arizona.	Black Eagle 2.	Mogul.	San Francisco.
Bell Audretta.	Buena Vista.	Ortiga.	Silver Eagle.
Black Eagle 1.	Imperial.	Relief.	

CABIBI DISTRICT.

Bahia.	Cokespa.	Providencia.	Tiger.
Cobriza.	Picacto.	Tajo.	

CERRO COLORADO.

Belmont.	Draughtsman.	Home Ticket.	Surveyor.
Bonanza.	Esperanza.	Mina del Tajo.	Twenty-Six.
Captive.	Esperanza E.	Poor.	Vazura.
Cerro Colorado.	Heintzleman.	Recorder.	

The principal districts, mines, and placers in Pinal and Maricopa Counties, are as follows:

SILVER KING DISTRICT.

Alice Bell.	Florence Adams.	Monday Morning.	Silver Chief.
Amador.	Ground Hog.	Montezuma.	Silver Cloud.
Athens.	Guanajualo.	Mountaineer.	Silver King.
Barnes.	Hamilton.	Nabob.	Silver King N.
Ben Franklin.	Hamilton S.	New Philadelphia.	Silver King S.
Bilk.	Hard Cash.	Pelican.	Styles.
Black Cloud.	Hardisty.	Pike.	Summit.
Bon Ton.	Helpmate.	Pinal.	Surprise.
California.	Hercules.	Reading.	Surprise S.
Cecelia.	Hoo-doo.	Redeemer.	Upper Crust.
Christmas.	Josephine.	Republican.	Washington.
Crown Point.	Last Chance.	Rising Sun.	Wedge.
Democrat.	London.	Ryan's.	Wild Apache.
East Union.	Moverick.	Scratch.	Wonder.
Fernandez.	Mogul.	Seventy-Six.	Wyoming.

GLOBE DISTRICT.

Almaden.	Chillson.	Lazy Bob.	Robert E. Lee.
Aztec.	Chromo.	Little Mac.	St. Louis.
Bameys.	Cook.	Little Mary Ann.	Saloma.
Bixby.	Democrat.	Meteor.	Savage.
Blue Bird.	Dickey.	Mexican.	Scott.
Blue Cap.	Duryea,	Miama.	Shasta.
Brilliant.	Ford.	Monarch.	Sherman.
Buckeye.	Friday.	Mt. Morris.	Silver Star.
Burns.	Globe.	Munson.	Stonewall Jackson.
Byron.	Grand Prize.	O'Doherty.	Susy.
Cadmus.	Hannibal.	Rambo.	Townsend.
Casket.	Helen.	Red Cross.	Treasure Vault.
Cedar Hill.	Hundred and One.	Rescue.	Webbs.
Centennial.	Isabella.	Richmond.	Wheatfield.
Champion.	Kelly.	Robert Allen.	

PIONEER DISTRICT.

Arko.	Flagstaff.	Lewis.	S. B. Farnham.
Babe.	Gem.	Morning Star.	Silver Belle.
Baldwin.	Germania.	Mun Shunk.	Silver Coin.
Baltimore.	Gift.	Ne Plus Ultra.	Silver Queen.
Belcher.	Glasgow.	Northern King.	Southern Belle.
Belladonna.	Goodenough.	Ohio.	Sunrise.
Bowman.	Grand Turk.	Peach Orchard.	Wanawhatta.
Copper Top.	Hope.	Promo.	Webfoot.
Empire.	Hyde.	Queen Creek.	Wheeler.
Essex.	Idlewild.	Ranger.	Yankee Boy.
Eureka.	Justice.	Saddle Rock.	

The principal districts, mines, and placers in Mojave County, are as follows :

CASTLE DOME DISTRICT.

Big Dome.	Cortez.	Little Willie.	McLane.
Buckeye.	Flora Temple.	Montezuma.	St. Charles.

EUREKA DISTRICT.

Bronze.	Buenna Vista.	Margarita.	Vernon.
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OWEN DISTRICT.

McCracken.	Senator.	Signal.	Silver Gance.
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GREENWOOD DISTRICT.

Burro.	Burro Ex.	Burro.	First Ex. South.
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CHLORIDE DISTRICT.

Albany.	Empire.	Pink Eye.	Senator.
Blue Dick.	Hermit.	Quaker.	Silver Hill.
Courier.	Independence.	Scheneectedy.	Sunday School.
Diana.	Oriental.	Schuykill.	Virginia.

HUALAPAI DISTRICT.

American Flag.	Clinton.	Jones.	Niles.
Armagosa.	Dandy.	May Flower.	Sixty-Three.
Black Snake.	Fairfield.	Mocking Bird.	Tiger.
Cady.	Fontenoy.	New York.	

CERBAT DISTRICT.

Champion	Legal Tender.	New Era.	Snowflake.
Continental.	Little Chief.	O'Fallon.	Twins.
Franklin.	Lobena.	Oro Plata.	Vanderbilt.
I. X. L.	Monitor.	Paymaster.	

The foregoing list does not, probably, embrace one-tenth of the mines located in Arizona, nor one-hundredth of the valuable claims that will be located in the future. The list is published more particularly to call the attention of the merchants, and other business men, and capitalists, to the importance of securing, at as early a day as possible, railroad communication with these vast mining districts. The trade of Arizona naturally belongs to San Francisco. Our foundries and machine-shops should build its mills, furnaces, and hoisting-works; our lumbermen should furnish the material for constructing the houses, and timbering the mines; our merchants should furnish the supplies of its cities, towns, and camps; our capital should continue to own and control its mineral resources. These results can only be attained through a railroad connection. Chicago and the East are reaching out for the trade of Arizona, and

every day brings them a little nearer. The Kansas Pacific Railroad, and the Atcheson and Santa Fe Railroad are steadily closing up the gap. Will we quietly sit down and see our inheritance pass into the hands of the cities east of the mountains?—or shall we, like business men, extend to Stanford & Co., such aid as they may require, and push our Yuma road through to Tucson, with branches to Prescott and the silver fields, a year at least ahead of our Eastern rivals? This, to-day, is the paramount question with the business men of San Francisco.

THE COMSTOCK.

Years of labor and millions of money spent in prospecting, along and beneath the surface, have demonstrated the fact that the metal-bearing quartz ledges of the great basin of Nevada are distinct in all essential characteristics from the formations which inclose them. Another marked peculiarity of these mineral lodes is, that they conform, in their general trend, to the great chains of mountains which belt the State. The inference from this latter fact is obvious, that these ledges are fissure veins, which have been formed by and along the lines of these upheavals. These chains of mountains are generally longitudinal in their bearings, and hence these ledges have nearly a general polar trend. The exceptions to this general rule, which appear wherever a vein is found lying in an adverse direction, are only observable where the formations are broken, and have been contorted from their regular trend by what are called "surface disturbances." The influences which have caused these disturbances are usually traced in counter-formations of volcanic rocks, which have been thrown up from below since the great and more general lines of upheaval have had an existence. Although these fissure veins have been disturbed by these subsequent upheavals at the point of intersection of the two formations, they generally are found, deeper down and further along the line of their trend, occupying their original relative positions, and continuing on indefinitely.

These mineral-bearing quartz ledges have other well-known and peculiar characteristics. They are usually found encased in, or at least bordered on one side by, well-defined clay walls, which form distinct lines of separation from the country rock. They usually exist in formations which admit of smooth and easy lines of cleavage, and have a permanent dip to the east. Yet, exceptions to even these well-known peculiarities are sometimes found. There are what are termed "contact veins," which will be found lying between cleavage rocks and other and irregular formations; ledges with dip to the west, having their clay walls reversed; and even irregular masses of mineral-bearing quartz, without any particular trend or dip. Such will always be found to have been pushed over and thrown from their regular positions by some disturbing force, such as that above mentioned.

The Comstock Lode is a genuine fissure vein, possessing all of the necessary characteristics in a remarkable degree. The lode lies nearly north and south, has a dip of about 45 degrees to the east, and a heavy clay, hanging wall. Its length has not even yet been fully determined. From the few thousand feet which the early locators supposed it to possess, it has been traced as many miles, and each year is adding to its acknowledged extent. Another idea of the Comstock which has been tenaciously held to by the early locators along the line of its trend, and those who have succeeded them in interest, is fast being proved untenable; and that is, the existence of a single ledge only. That there are several ledge formations, similar in their essentials yet distinct in other particulars, cropping to the surface east of the original Comstock, and separated from each other by broad volcanic dykes, no one who has ever carefully examined the country can deny. The advocates of the one ledge theory denominate all these "feeders" to the main ledge, and such, indeed, most of them may become, if traced to a sufficient depth; but until that has been done, the advocates of the theory of parallel ledges have the best of the argument and the position. The fact is, what is known as the Comstock is composed of many parallel ledges, some of which, like that of the Occidental, can never be traced to a sufficient depth to unite with the "mother lode." The same is true of that on which the Lady Bryan is located. While it may be true that the ledge on which the "big bonanza" of the Consolidated Virginia and California is located, and which lies 1,000 feet east of the original Comstock, and others still further east, unite with that ledge at some point on the incline, from 3,000 to 4,000 feet perpendicularly below the surface, there are others, still further east, cropping out in parallel lines, all of which have their dip also to the east the same as the first discovered ledge, and it is very questionable, to say the least, if these, or in fact any of the eastern ledges, will ever be found to unite with the western ledge. They may all concentrate in a monster mineral deposit below, but they will scarcely be traced to the same ledge, since they present formations which are by no means identical.

The discovery of the Comstock was one of the direct results of the great influx of gold-seekers to the Pacific Coast, although it did not take place till some years afterwards. The vicinity of its croppings and the cañons leading to the south and east from the slope of Mount Davidson were prospected for gold. The early pioneer found Mexicans at work crushing the rock which cropped to the surface along the line of the early locations on the Comstock, for gold, that metal predominating near the surface. In 1853 claims were worked for gold near a Mormon settlement named Johntown, near the mouth of the cañon leading south from Gold

Hill. Among the first prospectors attracted to the vicinity by the hope of finding gold, were Allen and Hosea Grosch, better known as the Grosch Brothers, and James Finney, the "Old Virginny" of early days. The Grosch Brothers were the only ones of these pioneers who had sufficient knowledge of geology to recognize the existence of silver in any of its native forms, and they, soon after arriving in 1853, reported the discovery of a silver ledge lying east of and along the side of "Sunrise Peak," since called Mount Davidson; but it is questionable whether the first location by "foreigners," as the prospectors were called, was made by them or by "Old Virginny," but they made theirs on the Comstock, "Old Virginny" on the west or Virginia ledge. Still, placer mining held the attention of the miners almost to the exclusion of all thought of the silver lode. The first location on the Comstock, that made by the Grosches, was called the Pioneer, and was located where Virginia City now stands, and is doubtless comprised in the ground owned by the Ophir. The first assessment ever laid on the Comstock was levied on the Pioneer, and paid during the winter of 1855-6.

In the early days, of which mention is made above, the principal workings in the vicinity of the Comstock were in Gold Cañon and Nigger Ravine on the south, and in Six and Seven-Mile Cañons on the north. This continued up to and through the Summer of 1857. The diggings at Gold Cañon were carried on by some thirty or forty men, mostly Germans, among them the Grosches, who had been deterred from silver mining on their claim by the want of the mechanical contrivances and chemicals necessary for the reduction of silver ore. During the Summer of 1857 a road was built from Lake Bigler (now Lake Tahoe) over to Placerville. This promised increased facilities for the importation of machinery and other necessaries. The limited amount of water which the section afforded gave out early in the season, and the miners began to talk of quartz ledges and prospect for lodes; but they were sought for the gold that was in them. It was the intention of the Grosch Brothers to procure machinery and the necessary chemicals for working silver ores; but that Fall Hosea died from the effects of a pick wound in his foot. Allen then started for California, with the intention of passing the Winter in superintending the construction of the required machinery; he was caught in the storms of the mountains on his passage over, and was reduced to the extremity of subsisting upon his own mule; he was at length rescued, only to die at Volcano, of fever induced by his exposures. With the death of these brothers passed away all the knowledge of the nature of silver ores and the manner of their reduction, which was possessed by the early Nevada pioneers.

It was, however, of too much importance to the world that the Comstock should be discovered and its vast treasures unearthed, for the rocks to guard their valuable secret longer. During the same winter (1857-8) a Norwegian, James Thompson by name, but better known among his comrades then and to history as "Snow-shoe Thompson," was engaged in carrying the mails from Genoa and Gold Cañon on foot over the mountains to Placerville. Prof. W. Frank Stewart, the well-known Washoe geologist and mining expert, was at that time connected with the *Weekly Observer*, published at Placerville, and to him Thompson was wont to bring the news from over the mountains and information from all the intervening country clear to Salt Lake. Thompson, at that time, brought to Prof. Stewart a small package of black-looking rock, bearing free gold, and wrapped in a piece of common check shirting. He said the boys had found it over in Gold Cañon; to them it was a new kind of gold-bearing rock, and they wanted to know what it was. The professor immediately pronounced it "black sulphurets of silver," containing free gold. Some specimens were sent to Sacramento to be assayed. The result startled the world. The black stuff was rich beyond compare. The fame thereof went abroad; the great excitement followed; and the next spring thousands went pouring over the mountains into Nevada. Up to this time this ore, assaying thousands of dollars per ton in silver, had been worked by the rude appliances of the day, for the gold which it contained, while the silver was allowed to go to waste.

But even the knowledge gained as above was productive of no immediate results. Silver ores could not be reduced, and still the surface diggings in Gold Cañon and Nigger Ravine held the southern position of the section, and those to the north and east of "Sunrise Peak," near where Virginia City cemetery now stands, held the northern. These were connected by an Indian trail over the Divide, and along where the Imperial hoisting works now stand. Dissatisfaction crept into the camp. The followers of the fickle goddess were as fickle as Fortune herself, and many left the wealth of the Comstock and went to Walker River; and so the Summer of '58 passed. Early in '59 John Bishop and Aleck Henderson discovered a "likely-looking ledge" in what was then known as the right fork of Gold Cañon. Finney, "Old Virginny," the early oracle in mining matters, thought well of the location. The ground was prospected with pick and pan, after the custom of the times. The first pan yielded fifteen cents. H. T. P. Comstock, who then kept a store in Carson, followed in several others. Water was brought in a flume from up the cañon. The boards for this flume were "backed" over from Washoe. The amount allowed to each claimant was fixed by the miner's code at fifty feet, and the place called Gold Hill because situated on a little hill just outside of Gold Cañon. Later in the season quicksilver was introduced from Johnstown, and the yield greatly increased. Some miners averaged as high as \$50 per day. In April of that year Bishop and a couple of companions located the Yellow Jacket. This was the first location made in Gold Hill, and the name was bestowed upon it in consequence of a nest of yellow jacket wasps which disputed possession with the locators.

When Allen Grosch started for California, he left the records of his and his brother's claims and the personal effects of both with Comstock, who naturally went into possession of the locations and exercised the rights of ownership over the whole. It was in this way that he became connected with the claim which has given his name to the lode, and rendered it immortal. This claim became subsequently embodied with others controlled by Penrod & Comstock, and "Old Virginny," and is now included in the Ophir. It also includes the claim of John Jessup, who was killed by Sides in Gold Hill. This claim was jumped by Reilly and McLaughlin while the most of the people were off to Carson, where Sides was taken for trial; and this is their claim to the credit of first discovering the Comstock. Had the lode been named after the true discoverer it would have been called the Grosch Lode, for the brothers unquestionably made the first location thereon. This was made before any other persons in the whole section knew anything about silver ores or their reduction.

In the year 1859 locations were made, not only along the line of the Comstock, as then known, but the entire country was dotted with them. Still milling in the vicinity was done by arrastras, of which the Ophir ran one, and the Central Mining Company No. 1 another. With the advent of 1860, however, came a new era in milling. In March of that year A. B. Paul visited the locality, and at once comprehended the situation. He entered into a contract with the Suceor Company for 35,000 tons of ore, and then returned to San Francisco, organized the Washoe Gold and Silver Mining Company, received the appointment of general superintendent, and set about constructing a steam mill. Others followed in his path, and thus was inaugurated the milling interest of the Comstock. Mr. Paul pushed forward his movements with an energy worthy of the occasion and the great interests hanging thereon; and on the 11th day of August the whistle of a 32-stamp steam mill woke for the first time the echoes of the surrounding mountains, as it inaugurated the alchemical process of turning dark and dirty-looking rock into shining bars of silver and gold. The first ore reduced in this mill was taken from the staple claim in Gold Hill. This "Pioneer Mill," as it was rightly named, was located just below the Devil's Gate toll-house, and occupied the same position as the Devil's Gate Mill of to-day.

This Pioneer Mill won but by four hours, however, the proud distinction of being first to herald the advent of civilization into the wilderness. The Harris & Coover Mill began the mystic art upon the same day, and gave the thunder of its stamps to swell the mighty chorus chanted over the inception of the grandest industry of the age. Then the Douglas, the Rhode Island, the Marysville and others took up the glad refrain, and joined the swelling anthem. Soon after, steam began to sing its song of deliverance, another branch of this great industry was inaugurated, and the Woodworth or Old Ophir Mill, down on the Carson River, initiated the enterprise there, which has since grown to such wonderful proportions. About the same time the Hoosier State Mill carried it over toward Virginia, and thus has the work gone on, till from the Carson to Mt. Davidson, the mighty chorus of a thousand stamps goes up unendingly.

The great advantages which are attendant upon the present facilities for the transportation of ores and their reduction will be seen from the following: In 1859 the Ophir Company had forty-five tons of the rich rock of their croppings transported to San Francisco, for reduction. The cost of transportation alone was 25 cents per pound, or \$500 a ton. They paid \$450 per ton for smelting, and yet the ore was so rich, and the return so great—over \$3,800 per ton—that a liberal margin was still left the company. At the present time the costs of mining and milling, including transportation, are from \$21.75 to \$24 per ton.

The exact amount of bullion which the Comstock has given to the world will never be known; but close calculation, aided by the various statistics at command, show the amount to be not far from \$350,000,000. It is estimated that 600 cords of wood per day are consumed in furnishing the steam necessary to run the hoisting works and steam mills reducing Comstock ore, and that not less than 90,000,000 feet of timber and lumber are yearly consumed in the mines. The question naturally arises, whence the supply necessary to meet this great and constantly increasing demand?

The timber, wood, and lumber interests of the Comstock are a separate industry, and a brief sketch of the means resorted to to induce a supply of these necessities, cannot be devoid of interest in this connection. Originally, the supply was drawn from the immediate vicinity of the mines, but that failed long ago. In fact, the whole country has been despoiled of its growth of timber clear to and over the peaks of the eastern range of the Sierras, from a point north of Carson, to below Clear Creek. The present supply is derived from two sources: first, the great basin of Lake Tahoe; and, second, the summit of the eastern range of the Sierras, above Huffaker's. From both sources the supply is brought down the mountains in flumes. The first flume of the section was constructed in 1869, and ran from the top of the Sierras, back of the city of Carson, easterly twelve miles, to the valley below. It was built up part way, and then extended back, as needed. The forests seemed to flee before it, so rapid was their destruction; nor were they safe till three miles over the summits of the mountains. This flume brought down 250,000 cords of wood, and untold amounts of timber, but its work is done. The Bonanza Flume, which supplies the Consolidated Virginia, California, C. & C. Shaft, Savage, Hale & Norcross, Gould & Curry, Best & Belcher, and Utah, with timber and lumber, and nine mills and the hoisting works of the above-mentioned mines with wood,

debouches its supplies into the valley at Huffaker's. This was put in operation last Summer, but before closed by the snows of Winter, furnished 10,000,000 feet of square timber for those mines, besides wood in abundance. Its capacity was never tested, but it has brought down one thousand cords in sixteen hours. The company has thirteen thousand acres of the finest timber lands of the Sierras, and have bought up all the water privileges which can be made available. The principal supply is derived from Hunter's Creek, and feeders come in a distance of five miles, and enter the flume through three branches, meeting it at proper intervals. The curves are so set and adjusted that sticks forty feet long will run them readily. It is fifteen miles in length, and in some places quite steep. The company have two mills, and have constructed two hundred miles of road through the mountains. They employed five hundred and seventy men last season, of whom one hundred and thirty were choppers, who received \$2 to \$2.25 per cord for their work. The trees are mostly felled and cut by saws, and powder supercedes the wedge in splitting, it taking but \$9 worth of powder and \$4.40 in fuse to split up one hundred cords. Much of this wood is sent down to the flume in a dry chute one and a half miles long.

But by far the mightiest lumber project yet started, is that of the Carson and Tahoe Lumber and Fluming Company, which has made accessible the whole of the great basin around Lake Tahoe, with its hundreds of thousands of acres of the best timber lands. This company, with an eye to the whole situation, and the wants of the future, bought, in 1872, a flume which had been built eleven miles along Clear Creek, and was bringing down the wood and lumber of the eastern slope of the Sierras, south of Carson, and stretching out toward the Lake Tahoe divide. This was the initial step in the great design, and gave its purchasers command of the head of Clear Creek, 1,200 feet above the valley, and extending within three miles, by direct line, of the lake. This flume was extended back as the supply of timber and wood along its course was exhausted, till with its two tributary branches it compassed thirty-five miles. The south one of these branches is six miles long, and fed by Spooner's Branch; the north one ten miles long, and supplied by Marlette Lake. It has also two feeders, one four and one-half miles in length, the other one and one-half miles. Its capacity has never been tested. The highest run ever made in one month, was four and one-half millions of feet of timber, and 12,700 cords of wood. It is not too much to say that it will take down to the valley 500,000 feet of timber, and 700 cords of wood a day.

In connection with this flume, and maintaining a part of the same industry, is the narrow-gauge railroad of the company, which runs from Glenbrook, on Lake Tahoe, to the Summit and the junction of the two branches of the flume. This summit is, however, 2,800 feet below the dividing ridge, being reached through a tunnel 480 feet long. This road makes an ascent of 915 feet in four three-eighths miles. The track is in the shape of an inverted Z, and leads from the lake through Pray's Ravine. It is $3\frac{1}{2}$ miles to the middle line of the Z, along which the train switches back till again near the lake, where the direct track is again taken through the tunnel to the flume. Here are the greatest facilities for handling the wood, timber, lumber, etc., and placing it in the water, which bears it rapidly down the mountain. Some of the large, square timbers gravitate so rapidly along the steeper places as to throw all the water from the flume, and when the bottom of the pitch is reached, have to wait till picked up and carried on by the coming flood. This road has a capacity of 300,000 feet per day, running two engines only.

This road is the link which connects the wood growth of the Lake Tahoe basin with the Comstock, for it makes junction with the lake itself, which is a mighty tributary, floating across its crystal breast 5,000,000 feet of timbers every season of seven months. Of course this can be increased almost infinitely as necessity requires and facilities are offered to take it to the flume at the summit.

The company have secured, also, 50,000 acres of the fine timber land around the lake. There are along the line of the track of the road 300,000 cords of wood, which are within easy reach, and as many more can be hauled to the road. Besides all this, the company have already crossed Lake Tahoe with their projects, and started a broad-gauge railroad out after the glorious growth of pine and spruce there found. This road will be extended back six miles, and the track will sweep round as the harvest is reaped, till all is gathered into the Comstock. Although but just started, it is bringing into the lake 250,000 feet of timber per day. This is rafted and propelled by steamboat across the lake to Glenbrook, where the Company have four mills, and whence it is taken to the flume by the narrow-gauge railroad or hauled to Carson by team. From this source is derived much of the fine lumber used in building in Virginia City, Gold Hill, Silver City, Dayton, Carson, and, in fact, all through the section. This project is as yet in its infancy, the first railroad engine having sounded its whistle July 4th, 1875.

Besides all this, there are yearly floated down the Carson River, to the market, immense quantities of wood. This comes in drives of from 15,000 cords upwards, and is taken out all along the river from Empire to Dayton. This wood, together with that sent down the flumes, is all piled, dried, and then marketed. These numerous piles of wood are a feature of interest to persons visiting the section, and often cover many acres. But the amount brought down by the Carson River is decreasing rapidly each year. In 1874, it amounted to 140,000 cords; in 1875, it decreased to 75,000; and the run will doubtless be still less this year. But

the decrease in this direction is more than made up by the increased capacity of the flumes, which will bring down not less than 180,000 cords this season. At least 200,000 cords of this wood finds its way to the Comstock over the Virginia and Truckee Railroad, which runs twenty-four trains each way per day between Carson and Virginia, each train taking wood and lumber up, and ore down to the mills on the Carson River, besides the usual and natural run of travel and freight of the country; thus making it one of the best paying roads in the world. To the amount transported by this road must be added 20,000 cords, which are hauled by trains from between Empire and Dayton, and consumed by mines and mills, and 20,000 cords more used by the engines of the road, to ascertain the full amount used there yearly, which is not less than 240,000 cords.

The hillsides in the region of the Comstock were in early days honeycombed by prospecting shafts and tunnels, many of which have for years remained unworked, and more will never be used again. Men of those days did not understand so well what to do as they do to-day. The pitch of the Comstock was, near the surface, to the west; and in those days western locations were considered of most importance and greatest value. Since the permanent pitch has been to the east, locations on permanent ledges in that direction have advanced considerably in public estimation. Experience has also taught the necessity of deep mining. This can be better carried on through a perpendicular shaft. The distance to be run is very much less, and the power directly applied. Hence, the gradual gravitation of the original locations down the mountain, and the establishment of new works in that direction.

There may not be more digging, but there is more and better prospecting done along the line of the Comstock to-day than ever before; because more systematically and scientifically done, and because better directed, and to better points. Men no longer grope like blind moles under ground. They have learned to read the record of the rocks better, and the result is that the Comstock never promised so well as to-day. Strikes have been made all along the line, and fresh dumps and new works are seen at all hands. Formerly, a shaft was a long time going down. Now, a location is made or bought, a company organized, a shaft started, and it reaches 1,000 feet in depth in a single year—because men know before they commence just what they want to do. The character of the machinery being put in the works of the older locations, too, is worthy of more than a passing notice; but for the description thereof, reference must be had to the respective mines. All these things indicate advancement, and that mining in Nevada is still in its infancy. These strikes which have been made must be developed, the ore stoped out and milled. This cannot be done till the milling facilities are increased. Every mill is busy, and running to its full capacity; and hence, many mines are compelled to leave their ore unstoped, and go on prospecting on the capital of the stockholders, when, if the mills were to be had, the ore would be reduced and the mines be self-sustaining.

There are many locations made, as will be seen by reference to the maps, which have never been incorporated. Of course, such can have no place in a work of this kind. There are, besides these home incorporations, which, while worthy of a place, have failed to furnish the necessary statistics, and are hence excluded. But enough have been put in to give an idea of the immense amount of capital actually employed in mining on the Comstock. If to this is added that of the other districts on the coast, the amount is past comprehension. There are about 400 incorporations on the Comstock, employing a nominal capital of about \$3,000,000,000. This would be the actual value of the mines incorporated, with the stock at par.

VIRGINIA CITY AND GOLD HILL.

Few places have overcome more natural disadvantages while struggling into existence than have Virginia City and Gold Hill; and fewer still hold so flourishing a condition amid so much barrenness and desolation. While the two places have very much in common, having sprung into existence the same year, and being inhabited by the same class of men, following the same pursuits and living in the same general manner, they present an entirely different outward appearance. Virginia is really "a city built on a hill that cannot be hid," while Gold Hill is built in a gully, and cannot be seen till looked down upon or run into. Still, the two places have been literally built together—the only line of separation being an arbitrary one, cutting diagonally across and turning aside for neither habitation nor hill. Virginia City occupies the eastern slope of Mount Davidson, while Gold Hill occupies both slopes and the head of the ravine leading south and east therefrom, and only wanders from its natural confines to meet its wayward sister on the divide. Both are exotics, and sustained in their exalted position, and amid the barrenness of desolation, by the Comstock.

The scenery around Virginia City and Gold Hill is grand beyond description. The very air which surrounds those storm-swept mountain heights glows with a crystal clearness which almost annihilates distance, and brings out every wrinkle on the unbosked brows of the surrounding mountains with a distinctness which is as charming as it is wonderful. The sun does not shine—it glares, except when veiled in clouds. The outlook from Virginia City is to the east, and is one seldom surpassed, even in the wondrous west. The sweep of vision to the north is circumscribed by the range which makes round to the east from Cedar Hill, and forms

almost a frame for the picture presented. In the immediate foreground, the "Sugar Loaf" draws the attention from piles of kindred peaks pitched promiscuously about. To the south, the range of Como lifts itself, bowed, bent, broken, as by the burden of years, and overlooking the Carson and intervening masses of scoriated rocks, all cut and chopped by crooked cañons and irregularly running ravines. As the more elevated portions of the city are reached, the view out over the desert hills and alkali plains, although devoid of the varied features which usually attract, and destitute of verdure save the gray of the sage, is very beautiful. In the Summer time, a single running line of green relieves the dullness of the picture; it marks the course of the Carson on its way to its death in the dusty desert, where it sinks. A spot of light-brown appears conspicuously in the middle background; it seems a little thing, a cloud of dust, or a field of grain ripening for the harvest. It is the twenty-six-mile desert, and, by the road, seventy miles away. Behind the line of the bluff range to the right, and seemingly just beyond, is seen what appears to be a straggling wood, feathering toward a hollow; that hollow is the Valley of Death, the old forty-mile desert, where so many of the weary pilgrims to the western shrine of gold wrecked their prairie schooners and marked their way with bleaching bones and abandoned vehicles. But, beyond all, the dim and distant Humboldts mix with heaven's blue arch and fade away to sky, and form the background of the picture. The eye rests easily on their snow-capped summits, yet they stand from 140 to 180 miles away. Passing south toward the divide, and another picture is presented, grander than the former, though not so distant; there is no desert, and no dipping toward water-courses, to be seen here. It is mountains everywhere; bold, bald, beetling brows, with the suows of years upon them; wrinkled fronts, down which the tears of ages have wept themselves away.

Virginia City is more than 6,000 feet above the level of the sea, and behind it rises Mt. Davidson, more than 2,000 feet higher still. This mountain, with its attendant range, including Middle, Ophir and Cedar Hills to the north, completely shuts out the view westward, towards the Sierras. Climb these heights, and the snowy range runs along like a living panorama, showing how nature lifts "old Winter clear from earth all Spring and Summer along." When Kit Carson and his little party of whites, attended by a few Crow Indians, passed this way *en route* to California in 1833; and again, thirteen years later, when Col. J. C. Fremont, with this same Kit Carson for a guide, made his famous tour of exploration, all this barrenness around Virginia was clothed in verdure. Even as late as 1860, forests of pine covered the rugged heights and darkened the deep ravines. All this verdure and beauty has been sacrificed to the Comstock, and even the roots and stumps have all been taken from the ground for miles around, by cunning Celestials, loaded on donkeys and toted to town for firewood. Trains of these Chinese donkeys passing through the streets, with their saddle-racks filled with wood, attended by their lunc-eyed leaders, form one of the peculiar features of Virginia life.

The Mormons were the earliest settlers in what was then Western Utah, but now the State of Nevada. Some of the early settlements in the vicinity of the Comstock were begun as early as 1847-8. Among the earliest of these were those at Franktown, in Washoe Valley, where a Mormon church still exists; in Eagle Valley, now Carson; and at Mormon station, now Genoa. There were no houses constructed in either Virginia City or Gold Hill, till 1859. The placer diggings, which up to that time were carried on in Six and Seven Mile-cañons, in Nigger Ravine and Gold Cañon, although respectable ventures, would not do to tie to permanently. Improvements, however, come working up from the valley of the Carson by way of Johntown, the Mormon settlement at the mouth of the cañon, and Silver City. After the discovery of the diggings at Gold Cañon, in 1859, and the location of the Yellow Jacket, as mentioned elsewhere, the influx of miners was so great that by the first of May of that year there was neither work nor accommodations for them. Many passed over the Divide and located claims along where Virginia City now stands. About this time the chances became so good in Gold Hill, and over the Divide, that it was determined to put up a log house and establish a permanent mining camp. The campers and locators all along the line turned in and helped to construct this, the first house in Gold Hill. After it was finished, Jessup, who had made one of the first locations on the Comstock, and Sides played cards for the drinks. A dispute arose, when Sides stabbed Jessup twice with a bowie-knife, killing him on the spot. The murderer was taken to Eagle Valley (Carson) for trial, but was never convicted; and this, the first murder, was allowed to go unpunished. Thus it was at the building for the first habitation of civilized man, was inaugurated a reign of violence which has not even yet been fully deposed. It is not all talk that they had to kill men to start a grave-yard on the Comstock, for a large number fell by violence before death by disease entered that modern Eden. Even to this day there are those there whose eyes sparkle with something of the "light of other days" at the mention of "a man for breakfast," and "a stiff to plant."

The first substantial dwelling ever erected in Virginia City was built by John L. Newman, who died in the Fall of 1861. This was situated near the corner of A Street and Sutton Avenue, and constructed some time in the summer of 1859. This structure was not erected, however, till after the second house had been built in Gold Hill. The early pioneers took easily to first principles, and became dwellers in tents and caves. Their habits were indeed primitive. The greater portion were glad to use the hay brought up to feed the mules which run the arastras, for a bed. These persons nevertheless used to boast of the wealth of their Morpheus-wooding contrivance, and tell of the head board of their bedstead, 2,000 feet high, their cots bordered

with silver and gold, their starry-decked coverings, etc. Whites, blacks, and between, all slept there together, in perfect security, during the night; but when day dawned and the sleepers arose, they found it necessary to post guards to watch their blankets.

In the fall of 1859, two arastras were running, one on Ophir rock, the other for Central Mining Company No. 1, located next south. Pearlman had, during the season, put up a house near Newman's, and the Central Mining Company had constructed an office between the two. These were the only buildings in Virginia City up to 1860, and were built of stone. Newman and Pearlman had small stocks of groceries, general merchandise, etc., including liquors, not sold, however, by the drink. Penrod, Comstock & Co. had a tent on the north side of Sutton Avenue, near A Street; Wells, Fargo & Co. one near them, run by Dave Ward, their first agent. A Street was then the business street, and at its juncture with Sutton Avenue was the point where the inhabitants, between two hundred and three hundred in number, met when the day's prospecting was over, to tell of their strikes, etc. Many of these were compelled to make beds in the sagebrush; but timber was plenty there then, and their couches were not so desolate and dreary as they would be laid there now. As the Winter came on, many made excavations in the mountain's side, and lived in what were called "holes in the wall." These were occupied very comfortably till the melting snows of Spring made them rather inconveniently moist. The Winter of 1859-60 was a very severe one. Snow fell about the middle of November to the depth of two feet, and about Christmas a fall of five feet followed, but the men made their holes larger and dug further into the mountain, and passed the season quite comfortably. One "hole in the wall," on B Street, south of Sutton Avenue, contained two billiard tables, and furnished accommodation for twelve men.

In these days, Gold Hill and Virginia kept very even paces toward civilization, while Silver City was far ahead of either. Flowery, over in Six-mile Cañon, began soon after to draw, and, in 1861, had over five hundred inhabitants. In 1860, the year after the first houses were put up in Virginia and Gold Hill, Silver City had four hotels, ten stores, two drug stores, two meat markets, three blacksmith shops, a lumber yard, and a number of good-looking cottages. Prices ruled in those days very much higher than now. Flour brought from \$30 to \$40 per 100 lbs.; sugar, 62½ cents; candles, 75 cents; shovels, \$5; picks, \$6; powder, \$1 per pound; eggs, \$3 per dozen, etc.

During the Summer of 1860, and with the advent of steam and the milling of the silver ores of the Comstock, improvements along its line jumped into being. Still, men built charily, for the old miners had seen too many thriving mining camps deserted in a day, to perform any labor not likely to tall. Thousands that season visited the locality, as they had done the Summer before, and went away, putting no faith in the Comstock. Still, the progress made was wonderful. So rapid, indeed, was the advent of the masses, that in two years from the time the first house was constructed in Virginia City, the place, with Flowery, had a population of 3,284; Gold Hill, 1,297; and Silver City, 1,022. The first house erected in Virginia City was more than a mile and a half from that built in Gold Hill, and the two were connected by an Indian trail only. To-day, the places are so built together that no one can tell from appearances where one leaves off and the other begins. Gold Hill was formerly connected with Silver City by over two miles of ravine. To-day, they are connected by a continued line of mines, mills, hotels, boarding and lodging-houses and dwellings, so that from Cedar Hill on the north, over the divide and down to the valley on the south, a distance of five miles, there runs a continued line of roofs, which give shelter to about 40,000 people, of which something more than half are in Virginia City.

It would be foreign to the purpose of this brief sketch of the settlement of Virginia and Gold Hill, to follow minutely their progress further; but there are certain interests which attach themselves to civilization which are of paramount importance with food and shelter, and among these is water. The early settlers found a few springs, the waters from which trickled out in sufficient abundance for the necessities of the few; but, with the advent of the heavy milling and mining interests of '60, and the people which attended and followed them, came demands far in excess of the supply. The want, in fact, from the first, of pure, fresh water, was severely felt. The mills generally sunk shafts and drifted for water, but a supply could not always and in all places be obtained by such a course. As the necessities in this direction became more and more pressing, water courses were tapped by the tunnels run into the mountain for the development of the mines, and the supply was increased materially from that source. A company was finally formed for the purpose of furnishing water, and their supply was chiefly obtained from the tunnels of the Santa Rita, Cole and New Granada mines, and led in pipes throughout Virginia City and Gold Hill. From this small beginning has grown the present Virginia and Gold Hill Water Company, the triumphs of which are of sufficient importance to demand a fuller notice.

Although on a steep mountain side, and 6,000 feet high, in a land of barrenness, and looking down upon shifting sands and burning alkali, Virginia City has the purest and best mountain water, and an abundance of it. This is taken from Dall's Creek, in the Sierras, at a point 2,100 feet above the track of the Virginia and Truckee Railroad in the valley below, whence it flows easterly along the crest of the mountain till received into an iron pipe. This pipe makes the descent into the valley, ascends the opposite side to the height of 1,540 feet above the track of the railroad, where it is taken up by another flume and brought on to the city. The inlet is

elevated above the outlet 460 feet, and the total length of this inverted siphon is but a trifle less than seven miles. The present supply is 2,000,000 gallons per day. The pressure and the friction caused by forcing it through seven miles of pipe, are equivalent to the force necessary to sustain a column of water 1,720 feet high. This is almost double that of which we have any account of the records of the day. The leading of such a stream of water across so deep a valley is an achievement which finds no parallel in the history of hydraulic engineering. The pipe has an orifice of twelve inches. At the point where the pressure is greatest, it is 5-16th of an inch in thickness, and riveted with 5-8ths inch rivets, in double rows. The company have, however, recently conducted across a second pipe, which is lap-welded, and which increases the capacity of their works to 10,800,000 gallons per day. This is not needed, however, at present. To increase their facilities for supplying all demands which may arise, the company are tapping Marlette Lake and tunneling 4-5ths of a mile through the intervening mountain. The outlet of this lake is 1,500 feet above Virginia, and within one mile of Lake Tahoe. The water will be conducted five miles in a flume, led under the mountain, again taken up by a flume, and led three miles, to the present head. And thus it is that Virginia City, in a land of drought, has a full supply of better water than Lake Michigan furnishes Chicago, and the company, with this eternal supply at their command, possess a property worth more than even the big bonanza itself. Gold Hill and Silver City are also supplied by the same company, as are all the mills situated along the line of the Comstock.

Situated as are Virginia City and Gold Hill, the one on a steep mountain side, the other in the head of a ravine whose banks are not less precipitous, these places must present many peculiarities in appearance. In many places they are not laid out in streets, but built in terraces. The laid-out streets which run north and south are very close together, and in the older portions of both places the cross streets are very steep and very narrow. As a necessary consequence, the buildings, which frequently extend from street to street, are very high on one end and low on the other. Where the buildings reach from street to street, as above, by entering from the lower side and ascending one or two flights of stairs, the stranger is not a little surprised to emerge from the ground-floor entrance of the street above. This illustrates, probably better than an elaborate description could, on what steep inclines these places are constructed. At first the styles of architecture were exceedingly simple, and little order was observed in the selection of sites for buildings. The consequence is that in many of the suburbs of these places there is no regularity whatever to be found, and the buildings appear, like the sage brush, just where it happens to be most convenient. Yet there are some fine yards and splendid residences to be found in both places, and public buildings which in their styles of architecture, construction and finish, would do credit to any city.

The nerve, the vim, the pluck, the energy of the citizens of Virginia, can never be faithfully portrayed in words. It must be seen and felt to be appreciated. The average stranger, coming in contact for the first time with her business men, is very apt to stand a little straighter, and walk a little prouder therefor. He has felt the force that is in them, and it has diffused itself all through him till he is ready to dare and able to do, what before was impossible for him to accomplish. This executive ability, which is characteristic of the Kings of the Comstock, has manifested itself in the great undertakings conceived and accomplished by them, some of which are mentioned in the article on the Comstock Lode, to be found elsewhere.

The great fire of October 26, '75, swept away nearly half of the business heart of the city, and licked up the little homes of a thousand dwellers on the mountain side. 'Tis true the world rushed to the rescue, and contributions came from everywhere; but these, valuable aids though they were, could not afford shelter from the fierce Winter then almost at hand. The energy and determination of the citizens, however, aided as they were by this outside help, enabled them to overcome the difficulty, and it is the wonder of the visitor of to-day, that so much has been accomplished and so little of the ruin of the disaster remains.

Virginia and Gold Hill are exceedingly cosmopolitan; perhaps not more so than San Francisco, but it is more apparent. All shades of complexions, all national peculiarities of customs and dress are observable, and all tongues heard. It would be very singular, indeed, if, with all this gathering of peoples and peculiarities, strange expressions were not heard. Even those of our own nationality soon learn peculiar modes of expression, if they do not get peculiar thoughts. For instance, in that section where mountains lift their barren peaks into the region of perpetual snow, what more natural than to say of a bald-headed man that "he has his head above timber line." A hungry man out of coin is characterized as one with whom the "grass is short;" and of one who is continually in hard luck it is said that he is "running in porphyry." Citizens passing have only time to greet each other with "How?" If any further civilities are exchanged the next address is "Well!" What do you know!" These salutations, it will be perceived, are eminently practical, and such as could belong to a community where mysteries as well as treasures are unearthed every day. But it is not so much expressions of this kind which attract attention as the odd vernaculars which are heard. What would the fashionable world make of the following? "Comes 'long you up cab'n 'mor'n, 'bout 4 o'clock s'pose. Shall make plenty passty. See?" It was an actual invitation to dinner, extended by a Cornish miner to his fellow, in the writer's hearing. It may have lacked the style and finish of the conventional "compliments" extended by the fashionable Mrs. Blank to her friends, but there was a heartiness about it which seldom attaches to a ticket to soup, and it was understood.

The man who receives and accepts such an invitation may be required to sit upon a stool and dine from bare boards, and with but few dishes; the cabin may be eight by ten only, and have a bed in it at that; there may be no hand of woman to tidy up and tastefully arrange the few articles in the single room, and prepare the food, but there will be bread and meat enough, and well cooked; there will be coffee and vegetables; and when it comes to the "passty," rest assured there'll be plenty and keen relish with it, unless the extent of your capacity has been fully reached before its time.

The man who judges from the exterior only, has no business in Virginia nor Gold Hill. He will be picked up a little too often for pleasure, if not too heavily for comfort. A man can there find any game he wants, whether played with a pack of cards or a pistol; whether it comes in the shape of a big knife, or a straight from the shoulder, or in a courtesy and kindness, and from the heart. If a man wants a friendly game he will find it, and strong or mild, as best suits him. But let a new comer into that modern Zion bear the honors which are heaped upon him meekly, for interference and arrogance have given the people many "a man for breakfast," and draped a thousand eyes in mourning which were not accustomed to shed tears. It will sometimes, too, happen that men are somewhat roughly put upon and sorely tried. At such times, the man who suffers himself to be imposed upon may as well shake the alkali dust from his feet, for there's no room for him on the mountain. But let him say he's a stranger, and ask for some one to see fair play, and he will be backed by the biggest part of those present, and in most instances, the occasion will be immediately bridged for him to pass over into favor.

So far as society is concerned, Virginia City and Gold Hill openly wear the worst side out. It is not quite true, as has been said, that there are more mistresses there than wives, and more public women than either, but there are enough of both. In this respect, however, these places do not differ materially from other prosperous mining towns on the coast. But churches, though not always well attended, are flourishing, and schools are prosperous, plentiful, and excellent. There are no brighter children in the world than are found in Storey County, and they are growing up sturdily and strong. The attenuated air of the mountains, and the exercise of climbing, which is a necessarily attendant condition upon pedestrianism in any direction, gives a breadth and depth to the lungs, and a rigidity to the muscles, seldom seen on the sea level. Then there is something in the mineral emanations from the soil which stimulates the brain, excites passion, and pushes a child on toward maturity at a fearful rate. There is more individuality in some Virginia boys of a dozen years, more character and self-reliance, and, I had almost said, more of the experiences of life, than are found in the three-score-and-ten residents of some of the staid towns of the States. These youths are not hot-house plants of tender growth, but are shrewd, sharp, calculating and old in everything but years.

What, then, is to be said of the men? One word expresses it all—"Everything." One can scarcely say too much in any direction, except toward meanness, and that is little known among them. They have their failings, many of them their vices, but mean men are very scarce. It has been a favorite theme among writers, that there is a connection between national scenery and national character, and it certainly does seem as if the man who dwelt continually among the beautiful, the sublime in nature, partakes so largely of his surroundings as to become noble and grand in his life. It is certainly true with many along the base of Mount Davidson—with most, in fact; for the masses of men live heroic lives, whether in a cabin or a palace; for those who take their lives in their hands and go down into the earth to toil amid the dangers of the depths, to find and bring up the shining ores, are no less heroes than those who face danger on the deep, or death amid the din and strife of battle. The accidents at the mines, great and small, average about one a day the year around; and of these about one-fifth are fatal. The thought of being precipitated a couple of thousand feet down a shaft is no less appalling because the darkness does not allow the eye to penetrate the depth. An appetite for breakfast before going to work is not stimulated at all by the consideration that sacks and blankets are in readiness on all the levels to receive your gathered remains in case an accident hurls the life and crushes the semblance of humanity out of your body. There is no tendency to cheerfulness in the thought that, while running a drift or crosscut, or sinking an incline, shaft, or winze, a flow of water may be encountered, and your lifeless remains be found in the sump weeks afterward, when the pump has reduced the water. And yet, with all these, and a thousand other dangers lying in wait for his life, the miner plies his pick. He has done this for years, till the ground under Virginia and Gold Hill is honeycombed with his workings and wanderings to the depth of from fifteen hundred to two thousand feet; and thousands spend one-third of their lives there, the dangers around dimly disclosed by a tallow dip. Were it not for the danger which surrounds him, some of the finest traits in his character might remain forever unknown; for, when one of his comrades, less fortunate than himself, has his life snuffed out—even as he extinguishes the candle in his hand—and leaves those behind in need of care and sustenance, the next pay day finds him a ready donor with the others of a sufficient amount to make the loved ones comfortable, and sometimes independent. Thus it is that the great dangers of his path make him considerate, for he may be the next to go, and his the next to need assistance; and "do as you would be done by" is exemplified, not coldly and calculatingly, but cheerfully and from the heart.

The man who expects to find ignorance a characteristic of the Washoe miner, does not

know the material which goes to compose the lot. Ignorance there may be among some classes, but it is no uncommon occurrence to find a man of liberal education working on the lower levels. Many such have risen therefrom to wealth, and taken their legitimate stations in life. Many of the prominent men are of this class, and they are all the worthier for the experiences gained. They are representative men, and never cease to practice the lesson learned on the levels. Many are the loads of wood and provisions which find their way to the homes of the destitute through their instrumentality. Nor do they give to be seen of men, for the recipients are left to thank God rather than man for the timely relief, since they seldom find out the donor's name. Yet these men are not all fit for saints, nor would they do well for ready-made angels; but when the record of their lives is made up, the "inasmuch as ye did it unto one of the least of these" will counterbalance many transgressions.

A miner was heard arguing, not long since, against the commonly received notion that heaven is an eternal Sunday, from the fact that Virginia City is "way up," and yet no Sunday came there at all, while further down they had one once a week. His logic may have been at fault, but his facts were not. There is no Sunday on the Comstock. The mills and the mines thunder and steam on continually. A delay of one day in seven would be a disaster beyond calculation. In fact, the balance of the week could not undo the damage which would follow stopping a mining pump for a single day. The same is, in a measure, true of the mills; and so every day, at the hours for changing shifts, may be seen the mining brigade, armed with their dinner-buckets, marching to the different hoisting works. But, notwithstanding these men cannot "remember the Sabbath day to keep it holy," the citizens remember that a miner has never been known, while in the line of his companions, to insult an unprotected female; and many a belated watcher has felt safe from harm as she has followed him and his lantern through the streets.

The stranger in Virginia and Gold Hill should make it a point to visit some of the principal mines, where these shifts are changing. Such physical men as come dripping with steam and perspiration, half naked, from the depths! Such complexions, too! Such perfect health as well as perfect development! Forms that Praxiteles might worship! No wonder their hearts beat healthfully, for none are more grandly made than they! An hour afterward, those same men, after a bath, a change of apparel, and a meal, may be seen, but scarcely recognized, among the gentlemanly promenaders of the streets, so changed is their appearance. These men, clad only in a pair of drawers, perform their eight hours of labor in the depths, where the temperature is from 100 to 120 degrees Fahrenheit, for which they receive four dollars per day.

A history of Virginia and Gold Hill that omits mention of the Virginia and Truckee Railroad, which has done so much to open up the mining interests, and develop the resources of the country, would be most faultily incomplete. This road has made the things which exist in the way of developments and progress on the Comstock possible. It has conducted in every way to the prosperity of the country. The facilities which it affords for transporting ore to the mills, as well as supplying the mines and mills with wood and lumber, have doubled the bullion yield of the Comstock, if not of Nevada. This great auxiliary to the mining interests of the Comstock, and growth of Virginia and Gold Hill, was first completed from Virginia to Carson, in the Winter of 1869-70. Subsequently the connection with the Central Pacific at Reno was effected. The immense business of the road may be surmised from what is said elsewhere of the amount of timber, lumber and wood necessary to supply the Comstock, and from the fact that the road pays the C. P. R. R., on an average, \$1,000 per day for freights on goods received therefrom. The freights collected at the Virginia office run from \$60,000 to \$90,000 per month, while that at Gold Hill is but little less.

The business connection between Virginia and San Francisco is very close, all sales of mining stocks being made therein; and the travel between the places is very great. The distance is 345 $\frac{3}{4}$ miles, and is now made in sixteen hours, although the Sierras have to be crossed, and the ascent of Mt. Davidson made. As this trip is made in the night both ways, the round journey can be accomplished and a day's business transacted, in either place in two nights and one day.

Since writing the foregoing, the following account of the way Virginia City received its name, has been handed in by Almarin B. Paul, who built the first mill ever constructed in Nevada, and who is the inventor of the Paul process for dry-working ores. Mr. Paul writes:

Among the many characters with whom I became acquainted in the early days of Washoe was "Old Virginny," as he was called. What his real name was I never took the trouble to inquire. When you spoke of "Old Virginny," every one knew whom you meant, and that was enough. "Old Virginny" was a great admirer of enterprise, and when building my first mill, he frequently came down from Virginia City, and would hang around, dropping now and then a complimentary remark, and, as a contrast of what the past had been and the future was like to be, would tell some story of his early trials. Had I noted them all down then, they would now be very interesting. Perhaps you do not know how Virginia City received its name. I have the following from "Old Virginny" himself:

"Well," said he, "McLaughlin, Comstock, one other, and myself had been working up near Spanish Ravine, and got out of everything to eat. So one day we concluded to take a trip to Chinatown (near where Silver City now stands), down Gold Cañon, where there was a trad-

ing post. We were very hungry when we started, and knowing we must have a meal before getting back, took our coffee-pot and frying pan with us. Getting along down below, where now Gold Hill is, Pat espied a lonely crow, and we soon made up our minds to capture him, which we did. We then built a fire, and, after plucking his feathers, crammed him into the coffee-pot, and I think the meal we made on that old black crow the best one I ever ate. We all relished it, and it made the balance of our journey down the cañon quite easy. At the trading post we laid in our flour, coffee, bacon and beans, and started back to Virginia. It was not Virginia then, but Silver City. Comstock called it Silver City, but others said it should be called 'Virginia City,' after me. Well, we laid in, among other things, some whiskey. We all had a liking for whiskey, and going back, lightened up all the bottles except one, and that I held on to. Going along, we got into a dispute about the name of the contemplated city—all of us a little sprung. The dispute was waxing warm, when an unlucky boulder happened to be in my way, and over it I stumbled, and away went the bottle, whiskey and I. That settled the question! There was something ominous about it, and the place was baptized 'Virginia City.'"

THE PROSPECTIVE SUPPLY OF SILVER AND GOLD FROM THE COMSTOCK.

There is no industry on the Pacific Coast more important to consider than that of mining for the precious metals. The production of these metals is especially important, in view of the demand for them for monetary purposes—the very highest service they are capable of rendering to man. A nation possessing in great measure these very desirable resources must be considered doubly fortified in stability and power, and, under a wise policy pursued by the Government, may be considered exempt from those exigencies and trying vicissitudes which sometimes put the credit of the nations in peril. Holding that, to be prosperous and strong financially, a nation should encourage every industry which calls into activity and properly utilizes its laboring arms, it would seem to be a wise policy to pursue to give to the mining branch of its industry every facility, protection, and encouragement possible. Evidently inspired by this purpose, Congress has made a law by which a title to mines may be obtained, and thereby remove the hazard of holding the same without a title. This law could be much improved if it were so amended that the hardy and indefatigable mining prospector may obtain title to the property upon which he spends his energies with less tax upon his pocket.

The assistance which the Government extended to the Sutro Tunnel enterprise will certainly prove in the end a wise action; and it may be confidently predicted that such similar enterprises will be, in various ways, encouraged by our Government in future.

The brief space allowed for this article precludes the possibility of giving an extended review of the mining interests of this coast; and therefore, as the great Comstock belt is and has been the center of attraction for many years, we will briefly refer to its present promises. The line of mineral claimed by the "Julia," the "Ward," and extensions southerly, arc coming into favor, because of the development of ore in the lower drifts of the first named; and it is believed that a body of ore exists in that region of the Comstock belt, which will command attention of operators at no distant date. Near to, but lying west from, the "Julia" development, the "Bullion," "Alpha," "Imperial," and "Exchequer," have from time to time come in contact with streaks of ore in their several drifts of a promising character, and afforded sufficient encouragement to the holders of the stock in each to induce the payment of assessments, and push with some diligence their prospecting drifts and winzes. At the present writing, the stock of each of these companies named is advancing in value with a rapidity which indicates the finding at last of an ore body of more than usual significance.

Further south, the claims of the "Yellow Jacket," "Kentuck," "Crown Point," "Belcher," "Seg. Belcher," and "Overman," begin to attract very positive attention, and, if rumor for once be true, not without the development of unusual merit.

There are some other mines on the Comstock belt, at the south end, in high favor with dealers in stocks, and, very likely, based upon meritorious developments, but the impression of the writer is, that those at the south end, here named, give the most decided promise, and hold out, at the present time, the most encouraging hopes.

Turning to the series of mining properties, designated as the "North End," we are led to make some statements, which may partake of the character of *prediction*. Touching the future of this end of the Comstock, while we may appear speculative, it is to the careful observer, very full of promise. The great depth at which ore bodies have been found (as in the case of the present Bonanzas, as they are called), lead to a belief that many bodies of ore exist in grounds that give no surface indications, or croppings whatever—and to say that any claim along the Comstock belt is of little worth, presupposes the most thorough and extensive explorations without finding any ore body. There are indications developed in the lower east drift of the Savage, which, upon examination, lead us to conclude that the great bonanza of the Comstock lode is yet to be found, and that its location may now shortly be determined. It will be remembered that about three years ago, there was struck in the Savage 2,200-foot drift a stream of very hot water. The flow of this water increased rapidly, until it was ascer-

tained that the machinery of the Savage, Hale & Norcross and even Gould & Curry combined, could not keep the water below the 1,700-foot level. Other machinery, of power never before seen upon the Comstock belt was erected upon these three mines, one after the other, and every appliance which money and engineering-skill could provide, were set in motion to drain this new found-water supply. For nearly three years the pumps have been run with the mightiest power that has ever been utilized in mining, and an enormous flood has been raised from 1,500 to 2,000 feet, and delivered upon the surface, and yet the fissure which supplies this vast volume of water could not be reached. Finally, it was determined to make a connection with the Sutro Tunnel, and discharge the water there, through at a depth of 1,500 or 1,600 feet below the surface. At this writing, the work is being done to this end, and when the machinery shall be so changed as to utilize all its power in raising water only to the tunnel level, this tremendous water supply will be turned into that great tunnel, and find its discharge upon the deserts of the lower Carson.

Just at this time, when the public are impatient for results, it is not strange that they admit more freely the great advantage of this tunnel, and feel to award to Mr. Sutro the highest praise for conceiving and carrying out to a successful issue the most important mining enterprise ever undertaken in America. The possibilities of the future in the locality drained by the Sutro Tunnel can scarcely be estimated. Especially if we consider the full meaning of this water development referred to. Permit us to speculate a little upon this mystery. When the Con. Virginia and California mines were discovered, water was found in them, which, by the aid of the Ophir and Gould and Curry works, effected a discharge in a few months, and the introduction of cooler air, so that drifts could be run, and shortly after ore could be raised. The water which was found in these supposed-to-be "greatest mines of the world," was repeatedly analyzed, and the character and components carefully noted. We have seen what the Con. Virginia and California mines amounted to, and at this day can approximate very nearly to the yield of gold and silver. Now, it may not be generally known, but it has been stated to the writer of this article repeatedly, that the water which for three years has been pumped from the Savage lower east drift, has been analyzed at intervals during that period and found to be the same as that analyzed from the bonanza mines.

Those who study the laws of nature, and find that "like conditions produce like results," are prepared to expect a development of mines marvelous in their extent as well as richness, when this great fissure shall be explored.

They reason as follows: Mines (they hold) are found in fissures. Water in the earth finds and fills these fissures, and the ores so coveted by man, are there formed. That water of a high temperature indicates long confinement in mineral areas, and naturally afford evidence of the minerals with which they were held in contact, and consequently when drained from these minerals, will carry some part of them in solution. This lies in proof, as revealed by the waters analyzed, coming from the bonanza mines. This is the ground upon which some anticipate the finding of ores of a like character in the fissure where this immense volume of water has lain, until tapped by the Savage drill. Now, the inference to be drawn from these analyses is, that there must be a very much larger fissure whence this water comes, than that of the Bonanza mines. The fissure may be very wide and not very long, but nature is chargeable with such eccentricities but rarely. It is safer, therefore, to conclude that this fissure of water will be found to extend to a great distance, northerly or southerly; how far southerly we know not; how far northerly we know not. If the water could be measured which has been raised therefrom, added to that which remains to be raised, we would behold a sea of it.

Were the Imperial or Jacket companies to press their drifts from their lowest levels eastward, and this water belt found, the conclusion would be that it extended south. But the writer has not the impression that this is the case. He does not believe that this particular water channel extends to the Hale & Norcross line. That it runs northerly from near the point where it was tapped is the more natural belief. That it has never been probed except by the Savage, and is a new line of mineral, must be conclusive, from the fact that none other have had to encounter the expense of drainage. It has for a long time, for various reasons, been the belief of some, that a valuable line of mineral lay embedded on the line of locations, of the "Mint," "Red" and "White" Cross, "Plutus," "Shamro," "North Con. Virginia" and thence in the direction of the "Wells Fargo," "Troy Con.," etc. still further north. It is possible that this water flow comes from the line of locations made by the "Jo Scates" company, but the development at the lowest east drift of the Ophir does not sustain such a supposition. The "Sierra Nevada" and the "Union" may have pushed their lower drifts so far east as to strike the "ragged edge" of the coming great bonanza. The North Con. Virginia, now sinking upon the line named, will also be in a fair way to strike this great ore body, and strike an attitude of defence against the invading forces of the "Sierra Nevada" and "Union." Great interests, however, are found to unite and compromise, while lesser interest expend themselves in litigation. One word of the bonanza firm and we have done. It is well known that this firm have, for the last three years, held steadily to the purpose of acquiring control of the Virginia mines. The Savage, Hale & Norcross, Gould & Curry, Best & Belcher, Con. Virginia, California, Ophir, Mexican, Union, North Consolidated Virginia, Utah, Ward (north) and Independence, are supposed to have passed to the control of these shrewd and far-seeing men. It cannot be supposed that they would have bent their efforts during the last three

years to the end of acquiring these properties if, in some way, *they had not been convinced of the practicability of the theory here stated.* If it shall prove a true theory, the bonanza firm have barely commenced to count their millions.

San Francisco, August 15th, 1878.

PACIFICUS.

ORE-WORKING PROCESSES AND IMPROVED MINING MACHINERY.

The discovery of the Comstock silver mines has led to the most extensive study of metallurgy and mining machinery, and has evolved methods for the treatment of both gold and silver ores quite in keeping with the valuable mechanical inventions and scientific discoveries adaptable to use in other branches of industry. True, as it is, that we have been often startled with the announcement of some new secret process which for causes the discoverer could best explain, never found fruition in either favor or profit, yet substantial progress has been made, and to-day the American miners and ore-workers occupy the foremost rank in these departments among all who make these matters a study, in every part of the world.

The metallurgical process of smelting ores is not new—indeed, it is very old; but only within the last fifteen years have absolute improvements been made, which greatly reduced the cost and added facilities to the operation. The Patio process is as old as any process for working silver ores—slow, very slow, and not very expensive—but alas! impracticable in this age of speed, and had to retire before methods which utilized the Patio principle in appliances which would admit of the expeditious treatment of large quantities. In the one case we smelt hundreds of tons of ore per day; in the other we chloridize and amalgamate with quicksilver in like quantity. Improvements in furnaces for smelting, not particularly designed to increase the per cent. of yield, but to lessen the expense and increase the quantity treated, appears to be the general object. Chloridising furnaces, greatly improving the method of roasting ores, are being brought forward until we are at a loss to see how it is possible to further add improvement; and the discovery of chemical solvents and re-agents in use with the metallurgist keep even pace with invention. Quite recently a discovery has been made which will be so cheap and effective in the working of ores—especially those of a rebellious character—that the chlorination methods of treatment must pass out of use altogether. Not only this, but under this method the use of stamps will no longer be required. We asked for an explanation, and were told by the inventor that a \$750 rock-breaker, which would reduce 75 tons of ore per day to the size of hickory-nuts, was the first requirement. Pass this ore into a common and cheap furnace, subject it to a red heat for one hour, draw from furnace and deliver while hot into a chemical bath, which renders the hardest ore friable, and so soft that it crumbles under the pressure of the foot; then pass the ore into grinding-pans, where in one hour it is reduced to a fine pulp, and afterwards amalgamated in thirty minutes. The estimated cost per ton of such treatment, we are told, will not exceed \$5 per ton where wood can be had at \$6 per cord. This process is called the “Euroka,” discovered by R. F. L. Hallock, who is treating ten tons per day in this manner, at a point about two miles above Alameda. He claims that the most refractory ores can be treated successfully; that is, to produce from 80 to 95 per cent. of their assay value. We draw attention to this lately-discovered process because of the representations of some very practical workers of ore who declare, from personal observation of its working, that the method and result is a marvel in metallurgy. If this new process will do what is represented, Mr. Hallock will have effected more for the success of our mining industry than all the men and processes that have preceded him. Great reduction in the cost of works, less expensive methods of working ores, adaptability to work all classes of ores—excepting perhaps those which carry a very large per cent. of galena—constitute improvements that must meet with general favor.

We may allude to another improvement in crushing and amalgamation, known as

PAUL'S DRY PROCESS,

By which system the ore is reduced and amalgamated dry, the ore having, before amalgamation takes place, all atmospheric dampness expelled, and also imparted to it a very low temperature of warmth. The system is a radical change in the amalgamation of ores, so radical, that like all new methods, it is making its way into use. As a cheap system of amalgamating the precious metals, it clearly possesses some advantages over all others, trials made on a scale of hundreds of tons, as well as in a small way, proving it to be highly effective. Gold so fine that it will not settle in water, in ten minutes after agitation is, by this plan, as readily amalgamated as the heavier particles. A large sum of money has been expended in perfecting this process, and the machine for operating it. To describe the process we will say the ore is first dried, then reduced coarsely by stamps or other crushing machinery. It then is passed into a cylinder, and there reduced to an impalpable powder by quartz attrition. The large pieces of quartz pulverizing the finer. From this cylinder, which is self-feeding and self-discharging, the ore is passed to the amalgamating barrel, where 15 per cent. in weight of mercury to ore is added, chemicals in the case of some ores being also added. The cylinder is then revolved till the precious

metals are all amalgamated, after which they are transferred to a settler-cylinder, where hot water is introduced, and the amalgum gathered at will into a safe. The whole operation, besides being simple and practical, is exceedingly efficient. In short, there are constant improvements being made throughout the whole line of the mechanical department of mining, as well as in metallurgical treatment, and we may justly congratulate not only the miners, but the whole country on the progress that has been made in this department of applied science whereby this great industry can hereafter be prosecuted with success not heretofore attained.

The past few years' scientific investigation has developed many improvements in the mode of handling mineral ores, with a view of more perfectly extracting the gold and silver therefrom. The direction more especially calling for improvements has been for the better reduction of the ores; and many very ingenious machines have been invented to accomplish this result, and, although partially successful, have not come up to the standard of the required want. The Davis Pulverizer comes the nearest to filling that required want, because it pulverizes the rock dry, and to any required fineness. The machine bids fair to supersede the old-fashioned stamps, on account of its simplicity of construction and lightness of parts, and ease of setting up—not requiring any other foundation than a few cross-sections of timbers laid on the ground. The best mill-men of the State, who have examined it, pronounce it a success, and, while they do so, think the inventor, Mr. John T. Davis, will continue to improve in the direction he is working, until the unwieldy and cumbersome stamps are laid aside as a thing of the past. The Pulverizer is a remarkable machine, in the fact that it does a larger amount of work with the same power developed than a stamp mill, and much better, with a much less cost of wear and tear, besides the first cost being less than one-half.

The inventor has spent much time in perfecting the machine and giving the reduction of ores much attention, with a view of developing some mechanical arrangement in the way of a mill that will turn the vast bodies of gold quartz on our Pacific Slope into mines of wealth. The problem, then, is to reduce the rock to an impalpable powder, set the gold free, and collect it without the loss of either the gold or the mercury—all of which can be done by pulverizing the ore dry and amalgamating it dry. In the latter process, the fine gold that floats away in the water is secured, and at a much less expense than the wet way. Large bodies of ore exist throughout this country, that contain gold in paying quantities, but, owing to its extreme fineness, cannot be collected by the use of water, but is quite easily amalgamated dry, when the ore is reduced to a sufficient fineness to set the gold free; and this is accomplished by the Davis Pulverizer.

THE COLLOQUY OF THE OLD TIMERS :

Wherein two veteran prospectors, meeting after a long separation, relate their adventures and inquire about their former companions. This quiet and original production, replete with so much that is peculiar to California and especially characteristic of the miner's life, is from the pen of Dr. Henry Degroot, himself a well known prospector and explorer, he having been a pioneer in almost every mining camp from Carriboo to Mexico. This, with other effusions of a like kind, was written by him merely as a pastime and with no idea that it would ever get into print; which it would not have done, only that these lines falling accidentally under the notice of John M. Foard, then editor of the *Golden City*, that gentleman appreciating its excellence, published it in that paper with the following introductory remarks: "This poem is the best of the kind we have ever seen in print. For rhymes that are queer and phrases that are peculiar, it beats Bret Harte's 'Heathen Chinee' all hollow. It entirely exhausts the nomenclature of the present as well as the early mining towns and camps of California, and for this reason it should be carefully placed among the archives of the Pioneer Association and be pasted in the scrap book of every Forty-niner. If any aspiring poet can write a better 'descriptive poem' than this, the *Golden City* would be glad to purchase it at any price."

That this is the most truly representative poem ever published on the subject treated of, admits of no question. Of the parties to the dialogue, one, as will be seen from his style of speech, is supposed to be from the South, while the other is presumably a northern or western man. Their manner of salutation on meeting is perfectly characteristic of this class of men, being abrupt, rough and boisterous, but sincere and hearty. The topics of conversation, the questions and answers, the whole phrasology are true to nature. It is miners' talk throughout. The names of the mining camps alluded to all have, or at least had, an actual existence, some few of them having latterly given place to others more in accordance with modern taste and notions of propriety.

"Hello!" "Hel-lo!" "Why, Jim!" "Why, Dan!"

"Good Lord! I want to know!"

"Well, well! old fell, give us your han'—

But Jim, how does it go?"

"Oh! sometimes gay and sometimes rough—

And how's it go with you?"

"Well, times jus now's a little tough

Up here in Idaho."

"But where ye been, Jim, ever since

We left the Stanislaw;

And pulled up stakes down there at Dent's—

Now eighteen years ago?"

"Wal, since the time that we put out

On that stampee from Stoney,

Been mos' the time knockin' about

Down into Air-e-zony."

Only been back a month or so,
And thought I'd take a tramp
Through the old diggin's long with Jo,
Who stops at Nigger Camp.

Started from Alpha on our trip,
And passed up the Divide,
Through Tangle-Leg and Let-Her-Rip,
Red Dog and Whisky Slide.

Then after leaving that we went
Down by the Tail-Holt Mill,
'Crost Greenhorn Mountain to Snow Tent,
And up to Gouge-Eye Hill.

From Gouge-Eye down to Esperance,
Slap Jack and Oro Fin;
Through Deadwood over to Last Chance,
Root Hog and Lost Ravine.

From Petticoat to Shirt-Tail Flat,
And on by Murderer's Bar,
Crost Bloody Run and thro' Wild Cat,
To Poker and Lone Star.

From Angel's Camp down by Rawhide
We took a run one night,
Through Chinese Roost and Satan's Pride,
Acrost to Hell's Delight.

Then came along to Poverty,
Dead Broke and Bottle Ridge,
By Haugtoun, Poor Man and Lone Tree,
Garrote and Smash-Up Bridge,

Through Nip and Tuck and Old Bear Trap,
Coon Hollow and Fair Play,
Along by Scorpion and Fir Gap,
Kauaka and El Rey.

We stopped one day at Never Sweat,
Another up at Ophir,
Then moved our hoots on to You Bet,
And struck across by Gopher

To Sucker, near Grass Widow Bend,
Whar as 'twas getting late,
We brought our journey to an end
Down by the Devil's Gate."

"Well Jim, you must uv seen a heap;
I'd like to make the rounds
As you have done, and take a peep
Through the old stamping grounds."

"Y-a-s, but I tell you what it is,
The times they ain't no more
In California as they was
'Way back in Fifty-Four.

'Hits swarming with them Chinese rats,
Wots tuk the country, sure,
A race that lives on dogs and cats,
Will make all mean or poor.

"Bnt 'bout the girls and Schneider's frow,
And Kate and Sal MaGee?
I s'pose they've all got married now—
Leastwise they ought to be."

"Married! You can huck high on that;
Some of them, two, three times;
First fellows they just had to get—
They didn't have the dimes."

"Well! well! do tell! is that the way
The gals is going on?
But how's the boys and old man Ray,
And Ike and Steve and John?"

And whas become of Zacheus Wade,
Who run the big mule train?"

"Wal, Zach he made his pile, they said,
And then went back to Maine.

And so did old Pop Ray and Steve,
And Ike and Johnny Yates—
All made a raise at last, I h'lieve,
And went home to the States."

"And Slater, him that took the trip
With us to Yazoo Branch?"

"Wal, Slate he kind o' lost his grip,
And settled on a ranch."

"And Jackass Jones that came about
With whisky on the bar?"

"Wal, Jackass, too, he petered out,
And went—I don't know whar."

"And tell me, where is Jerry Ring,
Who kept the Grizzly Bear,
Jes' down forinist the Lobscouse Spring,
And kilt the Greaser there?"

That Greaser Jesus don't you know,
That stahhed Mike at the hall,
The time we had the fandango
At Blood and Thunder Hall?"

"Oh Jerry didn't do no good,
Got crazy 'bout a woman,
And tuck at last to drinkin' hard,
'Cause she got sort o' common—

Y-a-s, was hy nature low inclined,
And went clean to the had,
Which worked so on to Jerry's mind
Hit almost made him mad.

Dick went one day up Pike Divide,
And thar lay Jerry dead,
A navy pistol by his side—
A hallet through his head."

"Tight papers them on Jerry Ring,
But, Jim, as sure as you live,
Them women is a dreadful thing—
For a man to have to do with.

But Plug Hat Smith that kept a stand—
Sold pens and ink and sich?"
"Wal, Plug he helt a poorish hand,
And never struck it rich.

Got sort o' lunny and stage-struck,
Cut up a heap o' capers,
And fual went below and tuck
To writin' for the papers."

"And Jolly Jake, that drove so long
There ou the Lightnin' Line,
And afterwards from One-horse Town
To Wehfoot and Port Wine?"

"Got hurt on Bogus Thunder Hill—
Throwed on his horses' necks—
Was carried up to Coyoteville,
And thar haunt in his checks.

"'Twas kind o' queer; but these they said,
War the last words of Jake
Wal, hoys, I'm on the down-hill grade,
And cannot reach the break."

"And Butcher Brown that used to boast
He'd killed so many men?"

"Ah, Butch, he met his match at last—
Van Sickle settled him;

Went out to Washoe, kilt three thar—
Found it gettin' hot;
Health required a change o' air,
And so got up aud got.

Said how he'd sent a baker's dozen
Acrost lots to the grave—
Would like to make the number even
Before he took his leave.

So went for Van and came hlamed nigh
A gettin' him, they say,
Then on his horse that stood near by,
He jumped and rode away.

Now Henry ain't no hand to blow,
But jes' that sort o' feller
On which its always safe to go
Your very hottom dollar.

Said to himself, like: 'Now this whelp,
To get his even tally,
Will very likely go and skelp
Some neighbor up the valley.

Reckon I'd better block his game,
And do the thing at onc't—
Besides, I don't much like this same
Rough way o' being bounced.'

When Sam had got 'bout a mild,
He heard a Minnie hum,
Looked round and thar war Van well heeled—
Just coming after him.

Not faneyng much that Miunie's tone
Sam put off on a run,
Like he would rather save his own
Thau raise the ha'r o' Van.

And so they rid—wal, I suspect,
Nigh on a three mild race—
Exchanging shots without effect,
When Van gave up the chase—

Leastwise lay off, for about midnight,
When Sam came back to Lute's,
He let him out in a squar fight,
Jes' standin' in his boots.

Next day the jury found deceased,
His name was Samuel Brown,
And further that they all believed
He had been taken down

By one Van Sickle, and somewhat
About Lute Old's last night,
And on their solemn oaths did swar
He sarved the d—d euss right!"

"Bully for Van! He's hard to beat—
And for the jury, too—
Though most a shame that way to cheat
The gallow's of its due.

Where's Sailor Jack, that used to cruise
With Alabam and Yank,
Them chaps that bilked the boarding bouse
And burst the faro Bank?"

"Jack left the country on a ship,
And t'others, I don't know as
They ever got back from a trip
They tuck to Barbacoas."

"Learn anything 'bout Teddy Kearn,
Or Bruisse Bob Magoon?"
"Botb down thar at the Bay, I hearn,
Keeping a 'Bit Saloon."

"And him that wore the big moostache?"
"You mean that rich French Count—
He's down thar too—a slinging hash
At the Miners' Restaurant.

Yas, Frisco's lousy with them sorts
And bums of all condition,
Some of them capping for the sports,
Some playing politielan."

"But tell me, Jim, about the sights,
And what you've done and seen;
Reckon you had some 'Pache fights,
Down yonder where you've been?"

"Y-a-s, got us in a rocky pass—
And thar corralled one day,
They had a dead sure thing on us—
Couldn't fight nor get away.

And 'fore our party could back out,
They shot poor Fred McKean;
The arrers flying thick about,
But not a varmint seen.

And when I found that Fred would die,
I felt almighty bad,
And jist laughed out, I couldn't cry,
I was so thundering mad.

And then I said, now look here, boys,
Ef you would save your lives,
You jist put up them shootin' toys,
And sail in with your knives.

And raisin' quick the 'Pache whoop,
I started on ahead—"
"And did the t'others back you up?"
"Yes, Dan, you bet they did!

And when the eusses seed us come,
They raised a scrouging yell,
To which our boys sang out each one,
'Wade in and give 'em—fits!'

And of our band I b'lieve the whole
Was wounded more or less;
But we made good Ingens of them all,
And they'll stay good—I guess.

Poor Fred, when I came back to him,
Though trying hard to speak,
Could only say: 'tell mother, Jim,'
He was so powerful weak.

And the next day we made his grave
Upon a little knoll,
Under the shade of a mesquit grove,
On the road to Cristoval.

We had after that another fight,
With them yar pesky fellows,
Down at Arroya Saucelite,
Among the little willows.

But thar they didn't get us foul—
We'd larnt their sneaking ways—
And you can swar we made 'em howl,
And git between two days.

As for their names, why, Dan, sich frights
You never come across—
'Espiritu Santo, which the whites
They call the 'Holy Ghost.'

'Las Mariquitas,' 'Jua de Dios'—
These names they seemed so funny,
We christened one the 'Runtz Marias,'
And t'other 'Pious Johnny.'

We altered heaps o' Greaser names—
'Los Ojos de Inez,'
'Sierra Blanco,' 'Sebastians,'
'El Cobra' and 'La Paz.'

So, too, we changed 'mongst other things,
'San Pedro' to 'St. Pat,'
'The Eyes of Inez' to 'Mud Springs,'
'La Paz' to 'Quaker Flat.'

'El Pajaro' we called 'The Bird,'
'La Reina,' 'Gypsy Queen,'
'Salimas' and 'El Rio Verde,'
'Salt River' and 'The Green.'

'San Nieboles' we dubbed 'Old Nie,'
'Moreno' 'Dirty Dun,'
'Arroya Mierito,' 'Murder Creek,'
'Fuereo,' 'Grouad Hog Run.'

We cut our names on every cross,
And burnt some to the ground,
To let the natives know their boss,
The white man, had been round.

Warm thar! Why, Dau, 'twas jes' that hot
That beans were cooked well done,
And we always biled the coffee-pot
Hit standing in the sun.

Soldiers who died they nearly froze—
Least that's the story they tell—
And sent right back for their underclothes
The moment they got to—well

Not to the land of the holy ones,
Whar blood shall cease to flow;
And thar being no use for these sons of guns,
They're not very apt to go.

"But, Dan, how has it been with you,
Off on some wild-geese chase?"
"Yes, took a trip to Cariboo
And over on the Peace;

Staid there three years and then turned south,
Came back to Camp McPhail,
And so on down to Quesnelle Mouth,
And cross the La Haeha Trail

To Kamloops and Okinagane,
And through the Grand Coule,
By way of the Saunilkameen,
Clean round to Cootenai.

Stopped till I made a raise again,
Then started out anew,
And striking cross by Coeur d' Alene,
Came on to Idaho."

I'd a close call at Tete l'June,
In May of Fifty-Seven,
A little more and there'd have been
Another saint in Heaven.

A half-breed Brule, a vicious set,
There—with a fishing spear—
The broken point is in me yet,
The scar, you see it here.

A well-aimed shot from Johnny Noon,
And at a single bound
That savage passed from Tete l'June
To the happy hunting ground.

"Well, Dan, you've been about some, too—
But tell me, if you know,
What has become of Ned McGrew,
And whar is Sleepy Joe?"

And Poker Pete and Monte Bill,
And—I forget his name—
What used to run the whisky-mill,
And keep the keno game?"

"Well, as for Ned, can't 'zactly say,
But 'bout the t'other three,
The last we heard, were up this way
A hanging on a tree—

Went into the Road Agency
Along with Texas Jim;
The Vigilants of Montany
Likewise also got him.

Sleepy was drowned at Uppur Dalles,
And so was Al La Tour—
Went in a skiff over the falls,
And we didn't see 'em no more.

Some think that Ned was eat by bears,
And I most think so, too,
Caus'd didn't one gobble up Nic McNares,
On the trail to Carihoo?

Cold up North! I've known a name
To congeal in my mouth,
And that is how the saying came
About the 'frozen truth.'

Yes, and I've seen still stranger feats,
You know, Jim, I'm no liar,—
The flames freeze into solid sheets,
As they rose up from the fire."

"Sure that's right cold! But tell me, Dan,
How goes the mining game,
And what's the chance here for a man
To strike a paying claim?"

"Well, jest 'bout here it's rather slim,
But I've got one that pays,
So pitch right in here with me, Jim,
And when we've made a raise,

We'll put off north with a good rig,
For yesterday I seen
Gus Gape, who said they'd struck it big,
High up on the Stickeen.

Or if you rather like the south,
Why, then, it's south we'll go;
The only drawback is the drouth,
Down that ar way, you know."

The next we hear of Dan and Jim
May be on the Youkon,
Or in the forests, damp and dim,
That shade the Amazon;

Or what's more likely still, we shall
Hear of them on their way
To the Diamond Fields beyond the Vaal
In Southern Africa.

And if there be no mines up there
For them to prospect, then
They'll surely leave the Heavenly shore
For the Pacific Coast again.

THE LIVE MINES OF THE PACIFIC COAST.

OFFICIAL MINING DIRECTORY.

ACCIDENTAL CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SIGEL DISTRICT, STOREY COUNTY, NEVADA.

Office, Safe Deposit Building, 323 Montgomery Street, room 20. Seth Marshall, Jr., president; Otto Metchke, secretary; Seth Marshall, R. Pennel, R. Pahl, Geo. W. Deitzler, W. O. Gould, trustees. Annual meeting, 13th day of December. No. of shares, 72,000. No. of feet, 3,000. Shares per foot, 24. No. of assessment, 1. Amount per share, ten cents. Levied August 21, 1876. Total assessment, \$7,200. Listed on California Stock Exchange Board.

ADAMS HILL CONSOLIDATED.

EUREKA DISTRICT, NEVADA.

Office, Room 37, Nevada Block. S. P. Dewey, president; J. C. Powell, superintendent; S. P. Dewey, Wm. P. Dewey, S. Middleton, W. W. Traylor, W. B. Murray, trustees. Annual meeting, third Monday in May.

This property takes its name from the hill on which it is located, being an eminence lying contiguous on the north to Ruby Hill, on which the Eureka, Richmond, and other well-known mines are situated. The estate of this company is made up of a number of pioneer claims, of which the General Lee, S. P. Dewey, Wide West, Alabama, Consul, and Webfoot are the most prominent; the tract here secured comprising several acres of mineral land. Of these claims, the General Lee, Wide West, and Alabama are patented. While the ore belt of Ruby Hill strikes north-west and south-east, that passing through Adams Hill bears nearly north and south, being, like its neighbor, permeated with ledges, large and small. The country here is composed of limestone, through which the principal lodes run mostly with the main mineral belt, the smaller appearing to be in many instances mere feeders of the larger lodes. This is especially the case on Adams Hill, where this system of concentration points to a heavy ore body about the middle of this Company's ground. Before these several claims came into the possession of the present Company, there was a good deal of work done upon them, the most of it in the process of taking out the surface ores. For several years past, operations have been conducted here with more system—a central shaft having been put down, and ore extraction mostly carried on from it. A great deal of rich ore has in times past been taken from these claims; nor has extraction suffered any curtailment under the new ownership. The company, with a view to keeping down expenses, have adopted the plan of leasing the mine,

whereby they insure its systematic exploration, the work being performed under the directions of their own Superintendent, without cost to themselves. Steam hoisting works, adequate to present demands upon them, have been put up here, and not for some time will their capacity have to be increased. As the ores here contain a greater percentage of quartz than those on Ruby Hill, the large companies on the latter buy them for fluxing. While the Adams Hill ores carry comparatively little lead, they still contain too much of this metal to be worked by amalgamation. They are, as a general thing, of high grade—carrying from \$45 to \$250 per ton of silver, and in some instances a good deal of gold. The main shaft sunk on the Wide West ground is now down 450 feet, and is believed to be in close proximity to a large ore body. This mine is in excellent hands, and will be worked in a business-like way and on its merits; wherefore it would seem to offer a good chance for investment to parties desirous of holding interests in a property so conducted.

AJAX GOLD AND SILVER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 1, 309 California Street, San Francisco. Robert Barton, president; A. F. Main, secretary; Capt. Thomas Buckley, superintendent; Robert Barton, Robert Sherwood, E. B. Rail, W. F. Myers, W. S. Lyle, trustees. Annual meeting, first Wednesday in September. No. of shares, 50,000. No. of feet, 750. Shares per foot, 60 $\frac{1}{2}$.

This one of the pioneer locations of Bodie, lies in the very centre of the richest claims in the district, adjoining the Mono on the south and the Concordia on the north. It lies west of the Goodshaw, and east of the Champion—all the above claims being now in course of active exploration. A large, double-compartment shaft is being put down on the Ajax, under a contract, to be sunk to a depth of one hundred feet, over half of which has already been made. Should not the shaft itself cut the ore body existing here, drifts will be run to intersect it, it being the purpose of the company to explore the ground with system and completeness. The company is made up largely of men of means, and whose habit it has been to make a success of this class of undertakings.

ALBION MINING COMPANY.

EUREKA, EUREKA COUNTY, NEVADA.

Office, 327 Pine Street. L. L. Robinson, president; D. F. Verdenal, secretary; E. N. Robinson, superintendent; L. L. Robinson, Clinton Gurnee, Francis Cutting, Geo. N. Hopkiss, Thos. Findley, J. H. Williams, E. N. Robinson, trustees. No. of shares, 100,000.

The following intelligent article, from the *Eureka Leader* of August 7th, 1878, will explain to our readers the Albion situation:

"By invitation of Superintendent E. N. Robinson, of the Albion, we this morning paid a visit to the Albion Mine and Charter Tunnel. At the Albion work is progressing finely. The new hoisting works and machinery, made especially to the order of the company, works to a charm, and is of sufficient capacity for doing the hoisting of a shaft 1,500 feet deep. The works are inclosed in a substantial building, and everything on top betokens system and order. The double compartment shaft, neatly and thoroughly timbered, is down 335 feet, at which point a station was made and a drift started in a southeasterly direction, which is now in 70 feet. The first fifty feet was run through hard limestone, but after that commenced to work easier, and show mineral stains. At present the face of the drift is in decomposed metamorphosed limestone, which has evidently been shattered and broken up by movement, and which carries a great deal of iron and lead stains, a formation that is always met with on Ruby Hill in close proximity to ore. The indication of the close presence of a large deposit is increasing every day, and it is the opinion of all practical miners and experts who have lately examined the formation in the face of the drift that an ore body will be encountered in a short distance. Progress is being made at the rate of six feet every twenty-four hours. That the Albion will soon wheel into line as a bullion producer, no one doubts.

"The systematic manner in which the mine is worked, and the intelligence displayed in carrying on the work, speaks volumes as to the ability of those who have it in charge. Our acquaintance with Messrs. Robinson and Potts dates back over twenty years, to the early days of California gold-quartz mining, and we can remember that at that time both gentlemen were considered authority in everything pertaining to that industry, a claim that they established by their success. Mr. Potts was in charge of the famous Princeton Mine, Mariposa County, and his able work enriched Trenor W. Park and his associates. What he does not know about mining is not worth learning, and the same may be truthfully said of Superintendent Robinson. Messrs. John Williams, Doolan, Parker and Davis are also thoroughgoing and expert miners, and probably have as extensive a knowledge of Ruby Hill and its peculiarities as any men in the district. This knowledge they are turning to account in their work at the Albion, and with every prospect of triumphant success."

ALEXANDER MINING COMPANY.

UNION DISTRICT, NYE COUNTY, NEVADA.

Office, Room 4, 323 Montgomery Street. James B. Cooper, president; Manuel San Pedro, superintendent; A. B. Cooper, secretary; James B. Cooper, Manuel San Pedro, Peter Leifer, William G. Barrett, John McNeil, trustees. Annual meeting, second Monday in September. Capital stock, \$5,000,000. No. of shares, 50,000. No. of feet, 4,500. Listed on California Stock and Exchange Board.

This is a mine that pays its own way from the start without an assessment, working to this date, July 1, 1878, only the one taken out in driving tunnels and drifts and sinking winzes. Gross yield of bullion to July 1, 1878, \$87,000. This speaks whole volumes as to the solid merit of the property. The developments show an immense contact vein, having a foot-wall of porphyry and a hanging wall of limestone, with a heavy lining of clay. The croppings of the lode are massive, and are traceable for miles. The Alexander mine lies very favorable for drainage, the present working being through tunnels, and it can be worked to a depth of 600 feet before reaching water level, and it now has an ore body exposed to view, and lying above the water lines, large enough to employ a first-class 40-stamp mill, which the company is now building, for over three years. The ores are free-working chlorides, and are very easily crushed, and yield a profit of over \$40 per ton. The mine being located at Grantsville, Nye County, Nevada, is in a country well provided with wood and water, and is near the well-known and fertile Reese River Valley. The mine is open to the inspection of all comers, and has all the indications of one that will come in strongly as a dividend-paying mine, and come to stay.

ALLEN CONSOLIDATED MINING COMPANY.

CEDAR HILL, VIRGINIA, NEVADA.

Office, 319 Pine Street, room 15. M. J. McDonald, president; J. M. Pew, secretary; Fred. Jones, superintendent; M. J. McDonald, S. Heydenfeldt, Jr., Ferd. Vassant, T. J. Owens, Joseph Clark, trustees. Annual meeting, first Monday in October. No. of shares, 50,000. No. of feet, 660.

The Allen Consolidated is a relocation of the old Allen Company, lying between the Sierra Nevada and Utah mines, made on the first of January, 1875, and comprises 660 feet of the Comstock Lode, for which a patent has been applied. The old Allen Company had sunk a shaft years ago to a depth of 450 feet, and struck the ledge with results varying from \$12 to \$20 per ton, but abandoned same in 1867, the present location having been made under the United States laws. It is proposed to merge this company with the Peytona Company, immediately adjoining it on the west, and thereby settle all disputes between these two companies, and that portion of the Comstock lying between the Sierra Nevada and Utah mines.

ALPHA CONSOLIDATED MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 29, Nevada Block. J. D. Fry, president; William Willis, secretary; A. C. Hamilton, superintendent; J. D. Fry, C. L. Weller, A. K. P. Harmon, W. M. Lent, Lewis Gerstde, trustees. Annual meeting, third Monday in June. No. of shares, 30,000. No. of assessments, 9. Amount, \$1.00. Levied, March 21, 1878. Total assessment, \$240,000. Listed on San Francisco Stock and Exchange Board.

This mine is located between the Exchequer and Con. Imperial grounds, where the deepest workings on the Comstock Lode are now in progress. This claim has been explored not only to a great depth, but also with great thoroughness, the work now going on upon the 2,400-foot level of this mine, being conducted through the shaft of the Con. Imperial, and a combination drift run for the development of Exchequer and Bullion grounds. Crosscut No. 2 west, on the above level, is at this time advanced a distance of 135 feet, its entire face in solid quartz, and very near to the ledge cut in Crosscut No. 1. A crosscut on this level has also been extended east 112 feet, the face of which is in soft vein porphyry and quartz carrying low assays. In a geological point of view, the excavations made in this level are of the most encouraging kind. The drift north on the 2,400-ft. level has been carried to the south line of the Exchequer, where the company will continue it on through their ground, the three companies here mentioned co-operating in the work of deep exploration. With the flattering prospects now presented in the lower levels of the Alpha and the developments recently reported in the immediate vicinity, this mine is likely to be the site of the next important ore find recorded on this section of the Comstock.

ALTA SILVER MINING COMPANY.

GOLD HILL MINING DISTRICT.

Office, 302 Montgomery Street. Daniel Cook, president; W. H. Watson, secretary; Ed. Boyle, superintendent; Daniel Cook, Seth Cook, R. N. Graves, Monroe Thomson, W. F. Myers, trustees. Annual meeting, third Tuesday in August. No. of shares, 103,000. No. of feet, 600. Shares per foot, 130. No. of assessment, 12. Amount, \$103,000. Levied, July 18, 1878. Total assessments, \$833,553.62½. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine, which covers a number of early locations on the south end of the great mother lode of Washoe, has been in course of active development for a series of years. It has from the first been regarded as a location of great promise, and has always had the benefit of a wise and energetic management on the ground. While under the supervision of Col. C. Derby, operations were conducted with especial vigor, this gentleman having in two years accomplished as much in the way of sinking on this property, as was effected upon some others in the vicinity in a period of ten or twelve years. The vein matter on this ground connects itself on the north with the Gold Hill group of mines, and on the south with the ore developments made in Silver Hill and other claims on the south. The Alta is the leading mine on the south end, or Devil's Gate District, on the Comstock Lode. Its shaft is now down 1,580 feet, having cut through the vein at the depth of 1,300 to 1,400 feet. Lateral drifts have been run on the 1,050, 1,150, 1,250, 1,350, 1,450 and 1,550-foot levels, with improved prospects on each successive level.

On the 1,450 level, the north lateral drift has penetrated good ore at a distance of seventy or eighty feet, running with the vein, and gaining in that distance a depth or width of twenty feet without as yet cutting the ore. Assays show \$150 to \$170, average ore. On the 1,550 foot level, lateral drifts are progressing both north and south, showing bunches of rich ore, and a drift is being pushed east direct for the ledge, which will be reached in a few days, when it is confidently expected developments will be made that will very shortly place this mine among the paying mines of the Comstock. The formation and character of the ledge matter and ore having greatly improved on the two lower levels, fully warrants such expectations. Considerable good ore has already been developed on the various levels, and the company will soon commence milling it, the prospect now being that this mine will in a few months be paying dividends. Like all other prospective bonanzas, it has suffered greatly from litigation with adverse claimants, having expended about half a million dollars in compromising with them. At length, however, all adverse claims have been disposed of, and its title is now perfect and no longer liable to be questioned. The shaft and hoisting and pumping machinery of this company are among the best on the Comstock Lode, and the work of development will be pushed forward to greater depths with the same energy and economy that has characterized the management during the past two years.

ALTAR GOLD AND SILVER MINING COMPANY.

ALTAR, SONORA, MEXICO.

Office, Merchants' Exchange, San Francisco, room 32. Fred. R. Webster, president; F. A. McGee, secretary; O. F. Gehricke, superintendent; F. R. Webster, W. B. Wiltshire, D. W. F. Bisbee, F. B. Webster, F. A. McGee, trustees. Annual meeting, second Monday in February. No. of shares, 100,000. No. of feet, 2,200. Shares per foot, 454.

This company was incorporated February 6th, 1878, in City and County of San Francisco, to mine for gold and silver in the District of Altar, State of Sonora, Mexico. Since its incorporation, the company has been vigorously working the mine, sinking shafts, drifting and crosscutting. Very rich bodies of ore have been laid bare; and the company has purchased a thirty-horse-power engine and ten-stamp mill, complete, to work either gold or silver, and will at once ship them to their mines, and expect to be able to pay dividends at an early date. The stock of the company is nearly all owned by Eastern capitalists. The company has recently sent an expert of skill and experience to inspect the mine, and he found quite a large vein of rich silver ore, and, taking samples from the vein, found them to assay from \$100 to \$1,000 and over per ton. This is said to be the largest and most important mine in the famed Altar Mining District, Sonora, Mexico.

ALTOONA QUICKSILVER MINING COMPANY.

CINNABAR.

Office, 438 California Street. M. Zellerbach, president; Charles Allenberg, secretary; C. A. Lawrence, superintendent; M. Zellerbach, Charles Allenberg, I. Frowenfeld, William Goldstein, S. I. Katz, trustees. Annual meeting, fourth Saturday in September. No. of shares, 50,000.

ALTURA MINING COMPANY.

HOOPE VALLEY, ALPINE COUNTY, CALIFORNIA.

Office, Room 80, Nevada Block. B. W. Mudge, president; Daniel Buck, secretary; Edward Barnes, superintendent; B. W. Mudge, Edward Barnes, B. F. Bivins, M. G. Cobb, Daniel Buck, trustees. Annual meeting, last Friday in March. No. of shares, 100,000. No. of feet, 1,500 by 600.

AMADOR CANAL AND MINING COMPANY.

AMADOR COUNTY, CALIFORNIA.

Office, 318 Pine Street. J. S. Emery, president; J. W. Clark, secretary; F. M. Brown, general manager; J. S. Emery, Abner Doble, C. Temple Emmet, F. M. Brown, Thomas Bell, trustees. Annual meeting, first Wednesday in August.

The Amador Canal and Mining Company is one of the great mining interests of California. The works are located in Amador County, and consist of a canal forty-five miles long, with the necessary reservoirs, pipes, side ditches, etc., for supplying water from the Blue Lakes, and the North Fork of the Mokelumne River, to the mines of the mother lode in Amador County, embracing the vicinity of Sutter Creek, Jackson, Amador, Drytown, etc., for mining purposes, and used as a motive power for quartz mills and other mining machinery, also, for supplying water to hydraulic mines. This is proving a great saving in the cost of reducing the ores, the companies estimating that they greatly increase their capacity for milling ores by using a good head of water in place of steam. The cost of running is greatly reduced by the use of water, thus enabling companies to work a lower grade of ore than when the motive power is steam, at the present and increasing price of fuel.

The works of the company have been pushed to completion, at a cost of over \$500,000, and are supplying the following companies with water for motive power and other purposes, viz.:

Keystone Con., 40 stamps; Onaida, 60 stamps; Amador Con., 40 stamps; Lincoln, 40 stamps; Original Amador, 30 stamps; Bunker Hill, 10 stamps; Gover, 20 stamps; Crown Point, 10 stamps; Talisman, 10 stamps; Pennsylvania, 10 stamps; Kennedy, 20 stamps; Newtonrichard, 10 stamps; Potosi, 10 stamps; Pine, 10 stamps; Rising Sun, 5. Also, the Newton Copper Mine, Amador Reduction Company, Gage Reduction Company, Sutter and Amador Water Company, Mannon Foundry, Sutter Creek; Knight's Foundry, Sutter Creek;

St. Mary's Hydraulic Mine, Bluxome Hydraulic Mine, Mehan Hydraulic Mine, Fulcher Hydraulic Mine, Amador Lumber Company, sawmill.

The capacity of the company's works is at least 100,000,000 gallons per day, and after using the water for supplying the mills and mines as above, it is taken up and used a second and third time for hydraulic mining and irrigating. The main canal is also used for floating mining timbers, lumber, wood, and lagging directly from the forests to the mills and mines.

New enterprises are continually springing up all along the route, and many sections of mining lands are getting ready for operations, which have heretofore lain idle on account of the limited supply of water necessary to separate the gold from the soil.

The works of the company are the only sources through which this supply can be obtained, and no other water rights exist which can injure or lessen the demand.

AMADOR LUMBER COMPANY.

AMADOR COUNTY.

Office, Room 6, 313 Pine Street. George R. Adams, president; J. W. Clark, secretary; F. M. Brown, superintendent; George R. Adams, J. S. Emery, F. M. Brown, J. L. Wetmore, J. M. Morton, trustees. Annual meeting, second Wednesday in November.

The Amador Lumber Company was organized for the purpose of manufacturing and selling lumber. Its sources of supply are the valuable forests in the eastern part of Mokelumne. Lumber and timber is floated from the mills by the Amador Canal to a market in Jackson and Sutter Creek, in Amador County. There is an extensive market in all that region, which cannot be so cheaply supplied from any other source. The company is in the successful prosecution of this business.

AMAZON CONSOLIDATED MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. Geo. B. Congdon, president; John Crockett, secretary; D. H. Jackson, superintendent; Geo. B. Congdon, J. P. Page, G. W. Osborn, H. S. Tibbey, F. P. Foster, trustees. Annual meeting fourth Tuesday in November. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. No. of assessments, 5. Amount, \$6,000. Levied, February 11, 1878. Total assessments, \$45,000. Listed on San Francisco Stock and Exchange Board.

This mine is being developed conjointly with the Glasgow, by a vertical shaft now sunk to a depth of 430 feet. This is a two-compartment shaft, and well timbered throughout. Over it have been erected steam hoisting works with capacity to do the lifting and pumping to a depth of 1,500 feet. Powerful pumping gear, extensive building shops, with full supply of tools, etc., have been provided, everything in and about the mine being of a substantial kind, and in first-class order. The length of drifts run, nearly all timbered, amount to nearly 500 feet. The lode of which this mine forms a section, is one of the most remarkable ever opened up in Western Nevada. Geologically speaking, it is the acme of perfection, of great thickness and surface exposure; it stands between its nearly upright walls like a piece of masonry. The linings of the walls consist of a heavy clay selvage, often more than a foot in thickness, which, separating the vein matter from the country rock, admits of the former being easily broken down and removed, thereby greatly reducing the cost of ore extraction. These walls are not only well lined, but they present, wherever uncovered, smooth, regular and unbroken faces, denoting here one of the best marked and well preserved fissures in nature. In the fracture and filling of this fissure powerful dynamic and magnetic agencies have been at work, and if it shall fail to be both persistent and fertile, nature will fail to have fully effected an obvious purpose. But this will not happen—there are ore bodies in this fracture. They may lie deep, but they will be found somewhere below in great power. Already much ore of medium grade has been developed in this mine. At the depth of 100 feet in main shaft, a cross drift has been run easterly fifty-four feet to the hanging wall of the vein. From here a drift was run to foot wall, fifty-five feet, showing a large amount of low grade ore. Lateral drifts were run each way thirty-five feet, and a winze sunk sixty feet, the ore not showing improvement. Sinking main shaft was continued until the 200-foot level was reached. At this depth a shaft penetrated vein. From this station drifts were run each way on the vein, one north sixty-five feet, and one south twenty-four feet. The ore at this level shows great improvement, but is badly broken and mixed with vein material. The walls are of smooth, blue clay and well defined. Sinking of the main shaft was then resumed, and at the depth of 300 feet, much water was encountered. From this point a cross drift was run westerly thirty-five feet to east or foot wall of the vein. Lateral drifts were run each way 100 feet; south drift showing ore in bunches the entire distance. The drift north toward the Glasgow ground cut a fine streak of ore two feet in thickness, giving good assays and entirely free from worthless vein material. This ore is on the line between Amazon and Glasgow mines. A winze was sunk on this vein twenty feet, and found to widen as it went down, water coming in such quantity as to impede work. Sinking main shaft was again resumed, and at a depth of near 400 feet a stream of water was found that drove the miners out of the shaft, and necessitated the putting in of the present pumping machinery. This occurred nearly two years ago, but the mine being then owned mostly by men of small means, they were unable, after putting in the new machinery, to resume active operations, wherefore work for a long time was intermitted. Recently the mine has gone into other and financially abler hands, who will now push its exploration with system and vigor. The Amazon and its mate, the Glasgow, are the coming mines on the southeastern sweep of the Comstock.

AMERICAN MINING AND DREDGING COMPANY.

Office, 328 Montgomery Street, room 20. George W. Deitzler, president; E. Moreau, secretary; F. Moreau, superintendent; George W. Deitzler, E. Moreau, W. O. Gould, E. Chaquette, Charles A. L. Laplante, trustees. Annual meeting, second Monday in March. Number of shares 60,000.

AMERICAN FLAT MINING COMPANY.

AMERICAN FLAT, STOREY COUNTY, NEVADA.

Office, 331 Montgomery Street. W. B. Boyden, president; C. A. Sankey, secretary; E. Strother, superintendent; W. B. Boyden, A. Stern, A. K. Grim, E. Strother, F. G. Smith, trustees. Annual meeting, first Wednesday in August. No. of shares, 30,000. No. of feet, 500. Shares per foot, 60. No. of assessment, 7. Amount, 25c. per share. Levied, May 18, 1877. Total assessments, \$172,500.

ANDES SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 2, Nevada Block. George S. Dodge, president; M. Landers, secretary; Jno. F. Egan, superintendent; George S. Dodge, Jno. Landers, R. F. Bunker, R. G. Brown, George W. Brittan, trustees. Annual meeting, 18th December. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessments, 10. Total assessment, \$325,000. Bullion yield, \$52,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine is situated directly west of the Consolidated Virginia and California. It was originally located in 1859, but re-located on 17th August, 1872. The company has a United States patent for its ground, dated 18th October, 1873. The work of development has been actively carried on since the re-location. The company has a three-compartment shaft six hundred feet in depth, with powerful hoisting and pumping machinery. It has expended \$325,000 in the development of the mine, a great deal of work having been done. Extensive drifts have been run on the 150, 300 and 450-foot levels. The ground of this company is that formerly owned by the Old Virginia and Burning Moscow companies, and is about three hundred feet west of the Comstock croppings.

ANDREWS MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. C. L. Weller, president; D. L. Thomas, secretary; C. L. Weller, A. P. K. Harmon, E. V. Robbins, Julius Jacobs, B. D. Simpson, trustees. Annual meeting, second Wednesday in May. No. of shares, 120,000. No. of feet, 600. Shares per foot, 200.

ARGENTINA GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Silas Selleck, president; Thad. S. Fitch, secretary; Silas Selleck, Henry S. Fitch, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, third Saturday in September. No. of shares, 100,000. Shares per foot, 133. No. of feet, 750.

The Argentina is one of a series of locations which have been made on a double line of croppings lying to the south and east of Florida mine, marking the course of two broad and well-defined mineral-bearing ledges, and named the Vivian and San Fernando Lode. These ledges, where they crop to the surface, and when cut by a tunnel on the San Fernando claim, are 300 feet and 200 feet broad, respectively, and filled with genuine matrix and carrying ore in bunches. A three-compartment working shaft has been commenced on the line between this claim and the Aureola, which adjoins it on the north, the expense of which is to be borne conjointly, and from which both claims are to be prospected.

ARGENTA MINING COMPANY.

TUSCARORA DISTRICT, BLKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. L. Brown, president; B. H. Brown, secretary; John E. Dixon, superintendent; J. L. Brown, G. W. Grayson, M. Herman, Henry Williams, E. M. Hall, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 2. Amount, 15c. per share. Levied, December 11, 1877. Total assessments, \$20,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

ARGONAUT MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, 511 California Street. H. H. Wood, president; J. Pentecost, secretary; F. A. Wilder, superintendent; J. F. Cassell, H. H. Wood, T. F. Palmer, J. Pentecost, Ira G. Holt, trustees. Annual meeting, fourth Tuesday in September. No. of shares, 60,000. No. of feet, 1,500.

ARMAND GOLD AND SILVER MINING COMPANY.

DEL NORTE COUNTY, CALIFORNIA.

Office, 240 Montgomery Street. A. W. Mann, president; J. L. Fields, secretary; A. B. Barnard, superintendent; A. W. Mann, A. B. Barnard, Jno. D. Gray, J. L. Fields, E. C. Jackson, trustees. Annual meeting, March 27th. No. of shares, 100,000. No. of acres, 440.

ARIZONA SILVER MINING COMPANY.

UNIONVILLE, HUMBOLDT COUNTY, NEVADA.

Office, Room 29, Nevada Block. P. H. Kramer, president; William Willis, secretary; John C. Fall, superintendent; P. H. Kramer, John C. Fall, H. L. Coye, George S. Dodge, Thomas Sunderland, trustees. Annual meeting, first Tuesday in June. No. of shares, 48,000. No. of assessment, 3. Amount, 25c. per share. Levied, February 15, 1877. Total assessments, \$108,000. Bullion yield, \$163,635.48.

ARIZONA UTAH GOLD AND SILVER MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, 408 California Street. Thos. J. Kerr, president; O. H. Spencer, secretary; John M. Rice, superintendent; Thomas J. Kerr, John R. Krouse, Thomas Arthur, Warner Buck, A. H. Brooks, trustees. Annual meeting, fourth Friday in February. Number of shares, 100,000. Number of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Number of assessment, 1; amount, three cents; levied September 10th; total assessment, \$3,000.

This property consists of 1,500 feet on a heavy, well-marked lode, and lies half a mile southerly from the celebrated "Mexican" mine, and about one and a half miles in a northerly direction from the "Blue Bird" mine, also well known for the rich character of its ores. The claim was taken up in July, 1877, since which time a shaft has been started and is now being put down on the ledge. This ledge has a north-easterly and south-westerly strike, is from four to eight feet in width, and crops out the entire length of the claim. From an open cut in the croppings, ore has been taken that assays at the rate of \$321.78 per ton. This ore is of the same kind as that taken from the "McMillan" mine—also in the Globe District—being composed of rich sulphurets, and chlorides carrying much horn-silver and native metal, and assaying all the way from \$1,000 to \$25,000 per ton. The gangue is also similar to that in the "Mexican" and "McMillan" mines, consisting largely of spar. The country formation is a stained granite, general throughout this region. This Company is made up of well-known San Francisco business men and working miners, who intend to open up the vein in a systematic and thorough manner, it being their purpose to hold the property and work it for what it is worth, and not manipulate it for a market. At a depth of about 125 feet they expect to develop a heavy body of good ore. To that level the shaft will be put down with expedition, there being funds on hand for the purpose. This mine is situated six miles from Globe City, and two and a half miles from the Miami mill, where they expect to have their ore worked. We may reasonably expect that this property will make a good ore exhibit in a very short time.

ATLANTIC CONSOLIDATED MINING COMPANY.

DEVIL'S GATE DISTRICT, NEVADA.

Office, Room 21, 328 Montgomery Street. C. X. Hobbs, president; David Wilder, secretary; John Yule, superintendent; C. X. Hobbs, James J. Green, W. P. Dougherty, W. M. Lubbock, M. Mayblum, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 1,800. Shares per foot, 55.59. No. of assessment, 1. Amount, \$25,000. Levied October 31, 1877. Total assessment, \$25,000. Bullion yield, \$750,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange.

The Atlantic Con. is a pioneer. It is situated a mile west of Silver City, and is reached by the way of the south bank of American Ravine. The old Atlantic Company was located in 1860, and, from 1861 to 1863, took out not less than \$750,000 in bullion. The ledge was cut in three places by tunnels, called respectively the 120, 220, and 320-ft. levels, and the ore, which was milled at the Brooks, Swansea, and Franklin mills, averaged from \$38 to \$40. It was taken from a vein 15 feet in thickness. A winze was sunk from the 320-ft. level, and some valuable ore taken therefrom. More recent developments have been made by a new tunnel, cutting the ledge lower down, and on what is called the 420-ft. level. At a distance of 530 feet from the mouth this tunnel cut the vein, and exposed an ore body which, on the adit level, was 30 feet in width and of good milling quality—the assays running from \$30 to \$100. This ore body is found at the intersection of two veins—one known as the red ledge, which carries gold, and a white ledge, bearing silver in chlorides and sulphurets. This adit level cuts the ledge 100 feet below where it was cut on the 320-ft. level above mentioned, and the space between the two is known to be filled with good ore. In estimating the value of the Atlantic Con., and of the ledge on which it is situated, one fact is worthy of consideration. For ten years the 320-ft. level of the mine supplied Silver City with water; but when the Overman struck the heavy flow of water last winter, the supply was cut off, and the mine has been perfectly drained since. This shows both mines to be on the same vein, and that the Overman will drain the Atlantic Con. at least 1,000 feet.

This is one of the few early Comstock locations that has a continuous record reaching down from the very inception of the Washoe movement to the present time. It has a history, and a good one. It has been more than self-sustaining throughout the entire period of its active development. It is an explored, productive property—not a mere prospect-hole, but a mine. The lode here is powerful, well marked, and fertile—carrying large deposits of good ore even in its upper workings. It has been opened enough to establish for it a most promising future. It occupies a locality traversed by the great southerly arm of the Comstock, and only requires a vigorous management, such as it now enjoys, to be speedily advanced to a prominent position. The most of the shares of this Company have recently been bought up by John P. Jones and other men of large mining experience and great financial strength, who purpose to put the mine in first-class shape and work it in a thorough and systematic manner. Bullion shipments will be in order here as soon as the new directory, just installed, can get supplies and a working force on the ground.

AUROKA TUNNEL AND MINING COMPANY.

BODIE DISTRICT.

Office, 304 California Street. R. N. Graves, president; A. Baird, secretary; H. M. Yerington, R. N. Graves, A. J. Ralston, N. K. Masten, W. E. Hale, trustees. No. of shares, 60,000. No. of assessment, 1. Amount, 15c. per share. Levied, August 12. Total assessment, \$9,000. Listed on San Francisco Stock and Exchange Board.

This is another of those deep driven adits designed to explore the great metalliferous zone

of Bodie far beneath the surface. It was among the early projects so significant of the abiding faith entertained by the pioneer miners in the permanent wealth and ultimate outcome of the district; these resolute men having with their slender means pushed it forward nearly a thousand feet towards its objective point. In the construction of this tunnel they had a double purpose—having in view the opening of a passage-way for draining and working the tier of veins already taken up in the ridge between Bodie Bluff and Silver Hill, and the discovery and locating of any blind lodes that the tunnel might intersect in its course. The surface claim taken up is 3,000 feet in length, extending clear across the mineral-bearing belt that here traverses the country. The tunnel enters the hill from the east, passing through the "Goodshaw," "South Standard," and such other parallel claims as lie in its path. For the purpose of aiding ventilation, an air-shaft has been opened from the surface to the tunnel level, and 500 feet in from its mouth a prospecting winze has been sunk to a depth of 100 feet. Several blind veins have already been intersected by the tunnel, all of which have been duly secured by the Company, who will in good time proceed to explore such other favorable mineral indications as this work has partially laid open. Among the lodes cut by the tunnel is one situate 765 feet from its entrance, that consists of fully 15 feet of solid vein matter, the whole of it sufficiently rich to warrant its thorough exploration. This enterprise can hardly fail of good results; the names of the Trustees being in themselves a sort of guarantee of ultimate success. The construction of this tunnel, which is to be pushed straightway to completion, will soon be supplemented by other work, designed to further develop the property and bring it into a productive condition.

AUREOLA GOLD AND SILVER MINING COMPANY.

DEVIL'S OATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Silas Selleck, president; Thad. S. Fitch, secretary; Silas Selleck, Henry S. Fitch, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, last Saturday in September. No. of shares, 100,000. Shares per foot, 133½. No. of feet, 750. No. of assessment, 1. Levied, June 26, 1876. Total assessments, \$10,000.

The Aureola is one of a number of claims which have been located on the Vivian and San Fernando lode, a broad mineral-bearing, double ledge, lying to the south and east of the Florida. The ledges crop to the surface together here, and are 600 feet in width, while further south they appear as separate and distinct formations. These croppings are rich in sulphurets, and where the ledges were intersected by a tunnel run into the San Fernando claim, both veins were found to be possessed of the true gangue, and to bear ore in bunches and streaks. A three-compartment, combination shaft has been started on the lue connecting this claim with the Argentina, and when this reaches the depth of 200 feet, cross cuts will be run and the vein opened up. The prospects are really excellent.

AYRES AND HOPKINS SILVER MINING COMPANY.

CARBON, ORMSBY COUNTY, NEVADA.

Office, 318 Pine Street, rooms 32 and 33. J. I. Ayres, president; J. W. Morgan, secretary; A. S. Gould, superintendent; J. I. Ayres, J. F. Place, L. B. Jewell, P. D. Barnhart, S. C. Backus, trustees. Annual meeting, third Monday in June. Number of shares, 100,000. Number of feet, 1,500. Shares per foot, 66½.

The Ayres and Hopkins occupies a position on the Ayres Lode, between the Ayres Con and the Loretta, and possesses all the valuable characteristics which distinguish that formation. It was the original location on the lode, and was made early. The ores from the croppings of the ledge, when exhibited in San Francisco, and at the Nevada State Fair, at Reno, attracted a very large share of attention, and much wonder was excited as to whence they came, as at that time the locality of the lode which produced them was kept a secret. They present a beautiful and peculiar appearance, resembling somewhat peacock copper, being stained on the exterior by that metal, but are remarkably free from all base metals. One peculiarity of the ore is that in the same piece will be found sulphurets, chlorides, bromides, ruby and native silver, and free gold. The poorest rock yet taken from the vein yields assays of \$120, while selections have been made which returned upwards of \$7,000. The average of the ledge is about \$350, and about five hundred tons of this ore have been already extracted and piled on the ground. The location is about two and one-half miles from Carson, and is easily accessible, and a good wagon road, which leads through Dry Cañon to the workings. There is an abundance of water near at hand, and wood is plenty and cheap in the vicinity. Ore can be mined and reduced on the Ayres Lode for about one-half the cost of mining and milling on the Comstock. Everything considered, this promises to be one of the most valuable mining sections of Nevada.

BALTIMORE CONSOLIDATED MINING COMPANY.

AMERICAN FLAT, STOREY COUNTY, NEVADA.

Office, 331 Montgomery Street. George Congdon, president; C. A. Sankey, secretary; E. Strother, superintendent; George Congdon, S. Heydenfeldt, E. Strother, W. B. Boyden, M. Stern, trustees. Annual meeting, first Thursday in October. No. of shares, 84,000. No. of feet, 1,050. Shares per foot, 80. No. of assessment, 19. Amount, 50c. per share. Levied, April 30, 1878. Total assessments, \$936,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

This was the pioneer mine of American Flat. It is situated south of the Caledonia. Since our last report, the shaft has been sunk to the 1,450-foot level, or about 200 feet deeper than it

was at that time. The hoisting and pumping works of the company are ample for the proper exploration of their mine. The works on the Caledonia drain this mine to a great extent. The work of development has been delayed during the past two months, but will shortly be resumed.

BALTIMORE MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA TERRITORY.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; C. Gurnee, Fred. W. Hadley, J. H. H. Williams, A. Thomas, E. F. Stone, trustees. Annual meeting, third Monday in December. No. of shares, 100,000. No. of feet, 1,500.

BARCELONA CONSOLIDATED MINING COMPANY,

SPANISH BELT DISTRICT, NYE COUNTY, NEVADA.

Office, 320 Sansome Street. Benj. Flint, president; Benj. Flint, Richard Homfray, F. A. Benjamin, H. K. Moore, trustees.

The Barcelona Con. is situated as above, and on the Tecoma range of mountains. The lode upon which this, with other locations, is made, is a genuine fissure contact vein, having a foot wall of porphyry and a hanging wall of slate, and is easily traceable for twelve miles along the range. The ledge through the Barcelona Con. crops heavily to the surface, having a width of 200 feet, the ore taken therefrom assaying remarkably high. The vein has been prospected by a shaft 175 feet in depth, and by levels from the 85 and 175-ft. stations, and by winzes and crosscuts therefrom. The crosscut on the lowest level has intersected a body of solid ore 14 feet in thickness. This ore, accordingly as it is assorted, will mill from \$50 to \$150 per ton, the mass of it averaging perhaps \$85 per ton. Steam hoisting works have been put up over the shaft, at a cost of about \$15,000. As the mine makes a good deal of water, this company, in conjunction with the South Barcelona, has commenced a tunnel, to be driven in from the east, which will strike the ledge at a depth of over 600 feet. Over 300 feet of this tunnel, which is to be 1,300 feet in length, is already completed. A great deal of the ore taken from this mine is of an excellent quality—several lots sent to San Francisco having been sold for over \$400 per ton. This district receives its name from the broad mineral range or belt that here strikes across the country in a north and south direction, and which is so called because it was first discovered by some Spanish-speaking miners. This belt carries two parallel lodes, one very heavy and the other light. The union of their two claims—one on each of these lodes—has added to the name of this Company the term "Consolidated." After a considerable intermission, they are about to resume active operations on their mine, which is considered one of the most promising in Central Nevada.

BAY STATE SILVER MINING COMPANY.

BRISTOL, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. R. H. Minister, president; J. W. Pew, secretary; Frank Wheeler, superintendent; R. H. Minister, E. B. Dorsey, M. J. McDonald, J. M. Day, C. B. Gould, trustees. Annual meeting, fourth Wednesday in December. No. of shares, 100,000. No. of feet, 1,250½.

BECHTEL GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, New Stock Exchange, Pine Street. Wm. M. Lent, president; Wm. H. Lent, secretary; Wm. M. Stewart, Wm. M. Lent, B. B. Minor, F. K. Bechtel, W. B. Carr, trustees. No. of shares, 60,000. The location embraces several parallel ledges.

This is an old location, owned and worked in early days by Judge Bechtel and the late Jas. Stark, the well known actor, who for some time gave his personal attention to the development of the property. Since the revival of operations in the district, the work of development has been carried on at first with good success, but latterly it has been under a cloud, owing to the coming in of a porphyry "horse" at a depth of 300 feet that continued for about 300 feet additional depth, but which has since been gradually giving way to ore that is now increasing in quantity and quality as depth is gained. The shaft has reached a depth of about 700 feet. Considerable bullion has been taken out from the upper levels, but the ore is of low grade compared with Standard and Bodie ores. No doubt richer ore will be found as developments progress.

BELLA UNION QUICKSILVER MINING COMPANY.

NAPA COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. C. H. Simpkins, president; C. H. Simpkins, H. C. Robinson, J. M. McDonald, A. C. Head, trustees. Annual meeting, third Tuesday in January. No. of shares, 50,000. Total assessments, \$36,236. Bullion yield, \$22,481.91.

BELLE ISLE MINING COMPANY.

TUSCARORA DISTRICT, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. G. W. Grayson, president; R. H. Brown, secretary, Jno. McNally, superintendent; G. W. Grayson, M. Herman, Milton Lambeth, Stephen Roberts, D. Crittenden, trustees. Annual meeting, fourth Thursday in September. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

BELCHER CONSOLIDATED GOLD MINING COMPANY.

BIG OAK FLAT, TUOLUMNE COUNTY, CALIFORNIA.

Office, 501 Sansome Street. G. Onesti, president; John Connor, secretary; A. Deferrari, superintendent; A. Deferrari, G. Onesti, L. Valente, G. Paravagna, L. Paravagna, trustees. Annual meeting, third Wednesday of March. No. of shares, 25,000. No. of feet, 4,050. Shares per foot, 617-100. Bullion yield, \$30,000.

The Belcher Consolidated Gold Mining Company's property is situated in Tuolumne County, near Big Oak Flat, and is a consolidation of the Deferrari, Diamond Gulch and Speranza mines. The property is in working operation, having a shaft, sunk on very heavy croppings on the ledge, to a depth of 195 feet, all the way in very good ore. About 125 feet below the surface a tunnel has been run to the ledge and connecting with the shaft. From the point of intersection drifts have been run 300 feet to the north and 200 feet to the south, respectively, showing a well-defined ledge of about four feet average width. A crosscut run in this level discovered, further to the west, another parallel ledge of great value, averaging from four to five feet in width. The ledge, in the incline below this level, is from four to five feet wide, giving splendid assays. The ore taken from above the tunnel level has by mill process averaged \$39, in free gold, carrying also a very high percentage of sulphurets. The company own about 400 feet east. Another ledge, averaging three feet, has been opened. A ten-stamp mill in perfect order, and also a two-stamp patent mill, worked by compressed air. The formation is slate one of the best formations to be met with, which proves itself in this property by the developments and improvements daily made. Assays lately made give \$55.12, \$67.77, \$89.18, in free gold, and \$616.25, \$842.32, \$586.56, per ton in sulphurets.

BELCHER SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. James Newlands, president; John Crockett, secretary; W. H. Smith, superintendent; J. D. Fry, A. K. P. Harmon, J. H. Dobinson, James Newlands, R. F. Morrow, trustees. Annual meeting, last Tuesday in January. No. of shares, 104,000. No. of feet, 1,040. Shares per foot, 100. No. of assessments, 14. Amount, \$104,000. Levied, May 14, 1878. Total assessments, \$1,284,400. No. of dividends, 33. Amount, \$194,000. Declared, April 5, 1876. Total dividends, \$15,397,200. Bullion yield, \$34,238,839.26. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Belcher location lies between the Crown Point and Overman. The hoisting works are beside the track of the Virginia and Truckee Railroad, where the greatest facilities are afforded for the reception of wood, lumber, and machinery, and for the shipment of ore. For several years, a large amount of ore was extracted from this mine—for a time as much as 500 tons per day—all of which was shipped for reduction. The most of this ore was taken out between the 1,000 and 1,500-ft. levels, near which latter the main ore body became exhausted. Since that event, the company have prosecuted their search for a new bonanza at greater depths; and now, below their 2,300-ft. level, have been rewarded by almost conclusive evidence of the presence of a new and valuable ore deposit at that point. In sinking to these profound depths, the entire ground has been thoroughly prospected by means of numerous drifts, crosscuts, and winzes, driven on the various levels—the whole of this work having been performed in accordance with the most approved modern methods of mine exploration. In the furtherance of this work, and with a view to meet the future requirements of the mine, powerful hoisting and pumping machinery has been placed over the main shaft, jointly sunk by this and the Crown Point Company, for exploring and working both mines. On the 2,360-ft. level, the lowest opened in the Belcher mine, a drift has been run north, connecting with the Crown Point. A drift has also been run south on the 1,600-ft. level, connecting with the Overman works. The north incline being sunk from the 2,360-ft. level of Belcher has now reached a depth of 100 feet—constituting the lowest point to which exploratory work has as yet been carried, on the Comstock.

Up till the time that it was superseded by the Consolidated Virginia and the California, the Belcher took the lead as a bullion-producer on the Comstock Lode—the amount of dividends disbursed having been large for the gross production made. What the Belcher has accomplished in this way can be seen at a glance by consulting the artistically drawn pen chart made by Mr. D. L. Thomas, giving a comprehensive exhibit of the total product, dividends, etc., of the mine—this chart having been hung up in the office of the company for general inspection. This mine, in its prosperous days, stood well in the estimation of all classes, the rich and the poor alike; and we doubt not it will soon again pass into bonanza, and again be restored to popular favor—neither the mine nor the management ever having lost the confidence of the public.

BELMONT MINING COMPANY.

PHILADELPHIA NYE COUNTY, NEVADA.

Office, 310 Pine Street, San Francisco. D. L. McDonald, president; J. W. Pew, secretary; J. J. Falkingham, superintendent; D. L. McDonald, Stephen Roberts, S. L. Stanley, M. J. McDonald, C. B. Gould, trustees. Annual meeting, second Friday in July. No. of shares, 50,000. No. of feet, 3,000. Shares per foot, 16 $\frac{2}{3}$. No. of assessments, 17. Amount \$12,500. Levied, May 6th, 1878. Total assessments, \$510,000. Bullion yield, \$325,151.42. Listed on San Francisco Stock and Exchange Board.

The Belmont claim, named after the town near by, is among the earliest taken up in this part of the Philadelphia District, having been made in 1865. Very thorough and systematic work has been done here, the mine being opened by a main shaft to a depth of over six hundred feet, with usual levels run north and south on the ledge. A body of good milling ore has been

opened up between the 200 and 300-foot levels north, that is estimated to contain some sixteen or eighteen hundred tons, and which is now being extracted. From a point between the 500 and 600-foot levels south, some fine ore is also being taken out. In the Highbridge ground, adjoining the Belmont on the north, an ore strike has recently been made, that gives additional importance to this and other mines in the vicinity. The Belmont company are owners of about three thousand feet on the dominant lode of the district, their claim being covered by United States patent. They also own one-half of the Monitor-Belmont mill and hoisting works, the former used for crushing their ores, and the latter for working their mine. On the 600-foot level in this mine, a strong, compact ledge has been developed, having the smooth, shapely walls characteristic of the masterly vein on which this series of claims is situated. With such a good exhibit of ore, Belmont shareholders may count on few and light assessments from this time on, if, indeed, they shall not find themselves wholly relieved from these burdens hereafter.

BELVIDERE GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 312 California Street. N. K. Masten, president; Andrew Baird, secretary; Porter Holmes, superintendent; R. N. Graves, J. P. Martin, A. J. Ralston, H. M. Yerrington, N. K. Masten, trustees. Annual meeting, first Thursday in November. No. of shares, 50,000. No. of feet, 1,500. No. of assessments, 1. Amount, 15c. per share. Levied, May 14th, 1878. Total assessments, \$9,000. Listed on San Francisco Stock and Exchange Board.

The Belvidere mine lies south of and next to the McClinton, and immediately west of the Bulwer. The company's claim covers an area of 1,500 by 300 feet, and embraces several parallel veins. Considerable work has been done toward developing the property, and very good results obtained. Messrs. Yerrington, Bliss, Haynie, and others, are the principal owners. They have a considerable quantity of good milling ore upon their dump, and no doubt further exploration will open up extensive deposits of a highly remunerative kind, as such have been already developed all around it. Of the old locations that now compose this property, the Washington, Yellow Jacket, and Savage have all, in times past, yielded quantities of high grade ore, that from the Washington having milled between \$200 and \$300 per ton. The company have recently put up steam hoisting works, and are pushing their main shaft with all diligence.

BENTON CONSOLIDATED MINING COMPANY.

GOLD HILL, NEVADA.

Office, 302 Montgomery Street. W. F. Myers, president; W. H. Watson, secretary; C. Derby, superintendent; Seth Cook, Daniel Cook, R. N. Graves, Jno. Skae, W. F. Myers, trustees. Annual meeting, second Thursday in March. No. of Shares, 108,000. No. of feet, 600. Shares per foot, 180. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The situation of the Benton will be best understood and appreciated when it is known that it is a recent segregation from the Alta. The ledge, etc., is more particularly mentioned under that head, as the developments have all been made on the Alta ground.

By a still later arrangement between the Benton and the Lady Washington Consolidated Company, one half of the ground covered by the claims of these and various other parties has been assigned to these two companies, the former receiving the south half lying next the Alta and the latter the other half, each getting one-half of the 108,000 shares of the stock formerly issued to the Benton Company. Into the Benton claim the valuable ore deposits already developed in the Alta are supposed to extend. The company will open up and work their ground wholly through the Alta shaft, thereby securing the means for its deep exploration at a mere nominal expense, the question of cost having been adjusted between the two companies.

BEST AND BELCHER MINING COMPANY.

VIRGINIA CITY, STOREY COUNTY, NEVADA.

Office, Room 29, Nevada Block. Robert Sherwood, president; William Willis, secretary; F. F. Osbiston, superintendent; Robert Sherwood, Geo. R. Wells, Geo. Wallace, George Congdon, S. Heydenfeldt, trustees. Annual meeting second Monday in July. No. of shares, 100,800. No. of assessment, 12. Amount, \$100,800. Levied, April 16, 1878. Total assessments, \$438,592. Listed on San Francisco Stock and Exchange Board.

The Best & Belcher is situated between the Consolidated Virginia and Gould & Curry mines, and is worked through the shaft of the latter company. The mine has been thoroughly prospected to the 1700-foot level, which has been opened up by a drift running the entire length of the mine. The position of the Best & Belcher, together with the developments which exist in the Consolidated Virginia, and the prospects in the Gould & Curry, on the same level, have their bearing upon the present and prospective value of the mine. The lateral drift has been run entirely outside the vein, for the reason that the rock worked better and allowed of more rapid progress than inside the ledge. In running this drift frequent heavy stringers of rich quartz were found coming into the vein. This company, in connection with the Gould & Curry, commenced sinking a new three-compartment shaft on the 21st September, 1878. Each company defrays one-half the cost of sinking. This new shaft is commenced considerably to the east of the ore body, which they expect to strike before reaching the 1700-foot level.

BLACK BEAR QUARTZ MINING COMPANY.

SISKIYOU COUNTY, CALIFORNIA.

Office, Room 13, 323 Montgomery Street. Thomas Bell, president; Wm. Letts Oliver, secretary; F. Harland, superintendent; Thomas Bell, S. Heydenfeldt, T. C. Wedderspoon, Alpheus Bull, John Daggett, trustees. No. of

shares, 30,000. No. of feet, 4,500. No. of dividends, 63. Total dividends, \$700,000. Bullion yield, \$1,500,000 in gold.

Not a quartz mine in California presents a better record, everything considered, than the Black Bear; this property, having been for thirteen years a steady and profitable bullion producer, and never having levied an assessment. During this time it has disbursed numerous dividends, a procedure it is likely to keep up for many years to come. This prosperity has been due chiefly to the inherent excellence of the mine itself, but in a large measure, also, to a capable management and a faithful administration of its financial affairs. That these latter have been ably and honestly cared for, the names of the men composing the directory is a sufficient guarantee.

For the past six years, this property has been mostly owned by well-known San Francisco mining men and capitalists, who have developed and outfitted it in a superior manner. The lode, which is a strong one, varying in width from 15 to 25 feet, has been explored to a depth of 480 feet in the shaft, and 1,100 below the croppings. It is enclosed in slate, has a northerly and southerly strike, and an inclination of about 45°. The ores have, most of the time, averaged from \$25 to \$30 per ton, but are not yielding at present over \$8 or \$10. As they can be worked cheaply, even this affords a good profit. For working the ores, the company have a 32-stamp mill, capable of reducing about 60 tons per day. Connected with the establishment is a foundry, sawmill, apparatus for treating the sulphurets, shops, houses, etc. As the ore here occurs much in chimneys, there is every likelihood that the grade will greatly improve in a short time.

BLUE JACKET MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 25, Nevada Block. A. Hemme, president; G. C. Pratt, secretary; W. Skyrme, superintendent; F. D. Bullock, Thomas R. Hayes, James Phelan, A. Hemme, W. Skyrme, trustees. Annual meeting, second Tuesday in October. No. of shares, 100,000. No. of feet, 900. Shares per foot, 1-9. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is situated between the Utah and Sierra Nevada, and is one of the old locations on the Comstock, but was not incorporated till September 4, 1878. The new company have commenced sinking a new three-compartment shaft, in place of the old one in use years ago. This shaft is being put down about 400 feet to the west of the croppings of the Comstock. The company believe they will strike that lode at a depth of less than 2,000 feet. They will erect hoisting and pumping machinery as soon as necessary.

BODIE GOLD MINING COMPANY.

BODIE, MONO COUNTY, CAL.

Office, New Exchange Building, Pine Street. Wm. M. Lent, president; Wm. H. Lent, secretary; Stephen Moore, superintendent; Wm. M. Lent, C. A. Burgess, Lewis Teese, Jr., John F. Boyd, Thomas Bell, trustees. No. of shares, 50,000. No. of dividend, 3. Total dividend, \$550,000. Listed on San Francisco Stock and Exchange Board.

The Bodie mine is the south extension of the Standard; but the continuation of the main vein of that mine into Bodie ground proved barren, and no good ore was found until they ran a prospecting drift west and struck a new ledge, now called the Bruce, over 200 feet from their shaft; and, continuing on 100 feet further, the Burgess ledge was struck, which is believed to be an extension of the West Bullion (Standard) ledge. These veins have both proved extraordinarily rich, and quite extensive, though as yet but little developed. The product of this mine in a twenty-stamp mill for the month of August last was over \$600,000—a yield unprecedented in California quartz mining. This could not be expected to continue long, and the bullion yield has been reduced probably one-half for September. And the winze has encountered a "horse," and, the south drift not looking as well, holders of the stock got frightened, and the price suddenly dropped from \$50 to \$15, but subsequently recovered somewhat, on assurances that there was ore enough in sight to pay three-dollar dividends for months to come. As the appearance of "horses" in the vein is not a very strange thing, this mine will doubtless be found to be a good mine for years to come, notwithstanding a "horse" now and then should come in. Most if not all ledges in Bodie, thus far developed, have encountered barren porphyry or "horses" at about the depth of 300 feet. The Standard did so, and found good ore below. The Bechtel, Red Cloud, and Bodie have encountered them, and will each succeed, no doubt, as did the Standard, in finding good ore below them. This Company, like all new bonanzas, is threatened with litigation, but undoubtedly have a good title to their mine.

BODIE TUNNEL AND MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 309 California Street, Room 1. Robert Sherwood, president; A. F. Main, secretary; Capt. Thomas Buckley, superintendent; Robert Sherwood, H. F. Cutter, F. Tagliabue, A. F. Main, George Daly, trustees. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33 $\frac{1}{3}$. No. of assessment, 1. Amount, 1c. Levied, March 18, 1878. Total assessment, \$1,000.

The advantages of exploring a series of parallel veins, where these are eligibly situated for the purpose, by means of tunneling, are so manifest that they will never fail to be availed of by the experienced mining engineer. Perceiving the natural facilities that existed for cross-cutting the Bechtel belt at a considerable depth, by driving a tunnel in from the West, the pioneer miners here commenced a work of this kind at an early date in the history of the

district. As the cost of driving through the solid rock was then very great and the means of these men were limited, they were compelled to suspend this work, after having advanced it some 500 feet. Recently a company, made up mostly of San Francisco capitalists and mining men, was organized for the purpose of completing this enterprise, which they expect to do in a very short period, nearly one half of the tunnel being already finished. The cost of driving an adit of this kind will not at the present time exceed \$8 or \$9 per foot, scarcely more than a third of what it was seventeen years ago, when this work was commenced; and, what is of more importance, the time required for excavating it may, through the employment of machine drills, be curtailed in nearly the same ratio as the cost. This tunnel will intersect the Bechtel and other parallel lodes about 600 feet below the surface, affording facilities for prospecting them at that depth, as well also for cheap ore extraction and drainage, as the company own a mill site at the mouth of the tunnel, including living springs. They will ultimately, no doubt, put up here extensive works for ore reduction. Taken altogether the company's several franchises constitute a first-class property, its value being considerably enhanced by the large means and well known energy of the men who own it.

BOOKER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 2, San Francisco Stock Exchange. C. A. Burgess, president; W. H. Lent, secretary; Joel Kay, superintendent; C. A. Burgess, C. X. Hobbs, J. G. McClinton, Wm. M. Lent, Lewis Teese, Jr., trustees. Annual meeting, third Wednesday of December. No. of shares, 100,000. Listed on San Francisco Stock Exchange Board.

The Booker is one of the new names in the old mining camp of Bodie. The claim has about 1,500 feet, and has a shaft about 200 feet in depth, which shows a three-foot vein, which assays well. The mine is southwest of the Bodie claim, and is near University tunnel. Present indications are highly satisfactory.

BRILLIANT MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 309 California Street. Robert Sherwood, president; Wm. A. M. Van Bokkelen, secretary; Sam. T. Curtis, superintendent; Robert Sherwood, Sam. T. Curtis, J. R. Middlemiss, Wm. A. M. Van Bokkelen, trustees. Annual meeting, third Wednesday in April. No. of shares, 100,000. No. of feet, 875. Listed on the San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This company is located on the Alta Company's ledge, next north of the Boyle Company, and has a width of 1,481 feet east and west. Active work is being done on the claim. A three-compartment shaft is being sunk on the claim, and a drift being run from the New York shaft at the 1,000-ft. level. The Sherwood Consolidated Company, next north, comprises 725 feet, and the Curtis Consolidated Company, 1,250 feet, is next north of the Sherwood. These three companies comprise the claims originally incorporated under the Brilliant.

BRINSWICK GOLD MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, Room 12, Cosmopolitan Hotel. Warren T. Lockhart, president; D. L. Thomas, secretary; J. T. Lockhart, superintendent; Warren T. Lockhart, John Hanyes, E. C. Mahew, Samuel Osborn, R. D. Wade, trustees. Annual meeting, second Tuesday in January. No. of shares, 100,000. No. of feet, 1,600. Shares per foot, 62. Bullion yield, \$14,345.39.

BUCKEYE MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, 331 Montgomery Street. John S. Gray, vice-president; C. A. Sankcy, secretary; C. C. Stevenson, superintendent; John S. Gray, C. C. Stevenson, A. H. Rutherford, W. L. Palmer, trustees. Annual meeting, last Friday in March. No. of shares, 4,800. No. of feet, 3,000. Shares per foot, 16. No. of assessment, 18. Amount, 50 cents. Levied, May 4, 1877. Total assessment, \$308,000.

BULLION MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 418 California Street. Wm. H. Sharp, president; Joseph Gruss, secretary; E. W. Schultz, superintendent; Wm. A. Schultz, N. Richard, J. W. Allyne, F. B. Taylor, Wm. H. Sharp, trustees. Annual meeting, second Thursday in January. No. of shares, 100,000. No. of feet, 947. No. of assessment, 6. Amount, \$1 per share. Levied, January 22, 1878. Total assessment, \$1,000,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine was located in 1859, immediately south of the Chollar, and known as the Cossier Claim. The company was originally incorporated under the laws of the Territory of Nevada. The Wellington and East Hope were incorporated with the foregoing, and still later the Fair View was bought and added. The principal place of business was for a long period in Virginia City. During its corporate existence in Nevada, there were levied forty-five assessments, aggregating \$1,802,000, and since then there have been six additional assessments, amounting to \$1,000,000, or a total of \$2,802,000. The first work done was to run a tunnel from near the site of the old Imperial works. This was pushed northerly 1,000 feet, but was directed too far toward the west to strike the ledge. This tunnel has since been used as a drain for that portion of the mine above its level, and receives the water pumped up from below. After the abandonment of the tunnel, the present shaft was commenced. It cut stringers of quartz near the surface, and when 300 feet down encountered a body of paying ore. Two hundred feet below this,

the hanging wall of the vein was struck. The shaft passed through a stratum of ledge matter 200 feet further before the foot wall of the ledge was reached. Low grade ore was found in a crosscut made from a lateral drift on this level, but the formation was found broken by the surface disturbance which had thrown up the divide between Virginia City and Gold Hill. A hundred feet below, however, this seemed to have been passed through, for the vein was followed to the Chollar line, and found to be better defined, and from 60 to 250 feet in width. Here 75 feet of low grade ore was cut through. From this level the incline commences, which runs to the 1400-foot level. This has recently been retimbered, and put in excellent order. When it was run, some streaks of very rich ore were found, and that suggested the idea of running under the formation from the 1700-foot level of the Imperial, which was accordingly done. A drift is being run north on the 1400-foot level, cutting a promising formation of clay, quartz and porphyry. The incline is being continued down toward the 1700-foot level. A winze is also being sunk from the 1400 to the 1700-foot level, and an upraise made from the latter level to meet this winze. Both winze and upraise, as well as the incline, are cutting good vein matter. A combination drift for the purpose of prospecting the Alpha, Exchequer and Bullion is being run from the 2,000-foot level of the Imperial shaft, and is cutting a stratum of dyke which contains stringers of quartz, and other indications of a near approach to an ore body, and gives promise of immediate and important developments. On the 1700, 1800 and 2,000-foot levels crosscutting has been prosecuted steadily, and a large body of quartz has been found in each, but nothing of value, or that would pay to extract, although sufficient is not known to pronounce the work a failure. At these depths the heat is excessive, and the progress necessarily slow.

BULWER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, Nevada Block. Daniel Cook, president; William Willis, secretary; William Irwin, superintendent; Daniel Cook, John F. Boyd, Monroe Thompson, H. G. Blasdel, R. N. Graves, trustees. Annual meeting, first Tuesday in June. No. of shares, 60,000. No. of feet, 3,000—three parallel ledges. No. of assessment, 1. Amount, 50c. per share. Total assessment, \$30,000. Listed on the San Francisco Stock and Exchange Board.

This is said to be the oldest location in the district, known in early days as the Homestake, from which at least a quarter of a million of dollars was taken out near the surface. It was the property of ex-Governor Blasdel, of Nevada, for ten or twelve years prior to its incorporation, June 29th, 1877, by Seth and Daniel Cook and John F. Boyd, principal owners of the Standard mine, who bought the controlling interest from the Governor. The latter bought it from the late William C. Ralston, who sunk some thousands in attempting to work it. The property consists of the original locations of the Homestake, Stonewall, and Potosi, the latter having been re-located by the present company as the Ralston No. 1 and Ralston No. 2, extending fifteen hundred feet each way from their main shaft. The Ralston vein is one of the largest in the district, and stands nearly perpendicular, carrying comparatively low grade ore; but the Homestake and Stonewall are veins of two and a-half and five feet in width, of high grade ore, similar to that of the Standard and Bodie mines, which are parallel veins lying immediately to the east. They have been prospected to the depth of four hundred feet, revealing the existence of large bodies of rich ore, lacking only milling facilities to be able to pay dividends for an indefinite period. A considerable amount of rich ore is already mined and ready for milling, and it is expected that a mill will be provided for very soon. The new vertical shaft of the Standard mine is near the ground of the Bulwer company, and is to be used for working both properties. The Bulwer tunnel, which is already advanced over eight hundred feet, will soon connect with the Standard shaft on the 400-foot level, after crosscutting the ledges of the Bulwer company. From the present outlook this mine, which now ranks third in the district in market value, will soon become at least the equal of the Standard and Bodie.

BENKER HILL GOLD MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 320 Sansome Street. Benjamin Flint, president; Warner Craig, secretary; A. Heath, superintendent; Benj. Flint, A. Heath, C. P. Tinkham, F. P. Cooper, Warner Craig, trustees.

This is what is known as a drift claim, consisting of those deep-lying gold deposits that occupy the channels of the ancient rivers. This claim has been opened by means of two tunnels, one sixteen hundred and the other eighteen hundred feet in length. The claim itself, which is two thousand by seven thousand feet, is located on the famous "Blue Lead," at the old mining camp of Howland Flat. The gravel here is very rich, paying at the rate of \$2 to the car-load. The gold is coarse and easily saved, one chispa weighing over one hundred ounces having been taken out here. This company, having their claim well opened, will soon commence drifting out gravel with a full force of hands. The property is a very valuable one, and cannot fail to yield large net revenue for many years to come.

BESHELL GOLD AND SILVER MINING COMPANY.

TYNDALL DISTRICT, PIMA COUNTY, ARIZONA.

Office, Room 14, 302 Montgomery Street. C. S. Benedict, president; Chas. Cranz, Jr., secretary; John E. Magee, superintendent; C. S. Benedict, John D. Graham, John Haynes, W. G. Graham, E. S. Irvin, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

The Bushell Mine is located on the Hamilton Lode, Santa Rita Mountains, nearly half a mile north of Salero Hill. The claim is 1,500 feet by 600, and consists of two parallel veins about forty feet apart; on the northerly vein are extensive ancient workings, showing that in the past the deposits here were sufficiently rich to invite special attention. The Bushell is the Boustillo, or "Old Tumacacori Mine," famous in the history of Northern Mexico, of which Southern Arizona was formerly a part. Reference is made to it in the works of Ward, Wilson, Pumpelly, Cozzens, Conklin, J. Ross Browne, and Col. R. J. Hinton in his recent work on that country. Extended references to it are also found in the civil and ecclesiastical archives of Sonora. The old Padres of the Tumacacori Mission, whose ruins are still seen in the Santa Cruz Valley, found it so rich in mineral and so full of promise, that they gave to it the name of their establishment. They, however, were not permitted to develop it to any great extent, as shortly after they had made preparations to thoroughly work it, they were slain by the Apache Indians, who have infested and overrun that whole section up to the 1st of May, 1877, preventing up till that date any successful mining operations being carried on there. On the west end of the mine are four shafts, sunk at that early period, from eighteen to twenty-five feet deep. These are now partially filled up. The surface of the vein, for a space of 235 feet, having been dug off to the depth of several feet. From these old workings, which are all irregularly stoped, large amounts of good ores have been extracted in the crudest manner, the richest then having been transported to the Tumacacori Mission for reduction. The old dumps, however, still contain sufficient good ore to pay largely for the labor of reduction. The formation, country rock, walls and casings of the vein are all that could be desired, indicating, as they do, true fissures. There are, also, strong indications that at a depth of 250 to 300 feet, these veins will come together, making a large vein from twenty-five to forty feet in width. On the surface these veins measure in width respectively, twenty-eight feet and four and a half feet, while at a depth of fifty feet, to which they have been opened, they show a large increase in width. The facilities for economical mining, and for reduction of the ores, are excellent, cheap and reliable labor being always at command, while wood and water are in ample supply. The management of the company is made up largely of well-known San Franciscans, who have increased the chances of a successful issue to the enterprise, by appointing Col. John D. Graham, Managing Director in the field. The reduction works of the company will soon be in course of erection, work on the mill site, flumes, etc., being now vigorously pressed.

CALABASAS LAND AND MINING COMPANY.

PIMA, PIMA COUNTY, ARIZONA.

Office, Room 32, Merchants' Exchange. John Currey, president; Francis A. McGee, secretary; Chas. P. Sykes, superintendent; John P. Jones, John Currey, Eugene L. Sullivan, George C. Perkins, Chas. P. Sykes, trustees. Annual meeting, second Tuesday in August. No. of shares, 100,000. No. of feet, 9,000. Shares per foot, 11 1/3.

The property of this company consists of the valuable mines of Buena Vista, San Xavier, Patterson, Arizona King, Arizona Queen, and the Democrat, with the important town site of Calabasas. These are all situated in the county of Pima, Arizona Territory, and are admirably located as to accessibility and convenience of transportation to and from the mines, while the site of Calabasas has an historic record as an old trading ranch, and for its commercial significance and possibilities. It is situated in the valley of the Upper Santa Cruz River, within ten miles of the Mexican frontier, and on the direct line of travel between Tucson and Sonora. The region in which these properties are located is now justly attracting great attention, not in California alone, but throughout the United States. Arizona is without question, as to mining possibilities, *the coming country*.

This enterprise is remarkably simple, yet unusually comprehensive. Indeed, it would be difficult to find one based upon safer principles, the intention being to rate the price of the shares mainly upon land values. And if it be that the value in the near future of the lots in the Calabasas town site, will be equal to the price asked for the shares, then it is plain to be seen that the outcome of the mines will be to the shareholders practically a *bonus*, or a premium offered to stockholders. A little inquiry, then, into the facts, by reading the interesting prospectus issued by the company, and consulting the company's officers, will determine this.

As to the character of the directors of this company, it must be said that they possess the confidence of the public, and but one opinion can be entertained for these men whose names, for the past twenty or twenty-five years, have been connected, not only with the political history of the State, but with legitimate and solid business and landed enterprises. The prospectus of the company must be read to properly understand the significance and value of Calabasas as a practical site for a mining and agricultural business in Southern Arizona. This name, "Calabasas," is found on all the old Spanish maps for the last 250 years, and it is claimed that the Santa Cruz River, near the Potrero, and approaching Sonora, fashions a soil of modern "Valley of the Euphrates," for commerce and travel; that it will be in the future as in the past 300 years, the great longitudinal pathway for railroads, travel, and commerce between the two Republics; that it will permanently control the Mexican continental freight and fare interests that terminate and belong to San Francisco and the Upper Pacific Coast; and that according to Col. Hinton's "Hand Book of Arizona," page 71, "by the Valley of the Santa Cruz, Mexico will be knit to us, and the entire section of the Union will be connected by this roadway with the growing Pacific Coast."

When we consider that for three centuries this route by the Calabasas has been traversed by cavalier, soldier, and priest, and that it was in its glory when the "Mayflower" landed at Plymouth Rock, and that it has been for long years the stronghold of the Apache, and that no valley, or spot on the American continent has half so tragic and bloody a history, any candid reader must admit that the locators of the new Calabasas are justly pardonable for the pride they take in offering its advantages to the public, and in prophesying as they do, that civilization, good government, and great wealth are soon to hold their seat in that wild and wondrously fertile "Gateway of the Mountains."

As to the value of the mines belonging to the Calabasas Land and Mining Company, the reader can best judge by the developments of the western extension of the San Xavier Mine—the claim now owned and worked by the San Xavier Mining and Smelting Company, which at the time of its purchase, did not present any more favorable or promising indications than the other on this extensive lode, all of which belong to the Calabasas Land and Mining Company. The same bold outcrop and favorable surface indications for the entire distance of over 7,000 feet was so prominent, that it was with great hesitancy the San Xavier Company decided to purchase the Western Extension, they having at the time the privilege of a choice of location on the lode. The development upon the Western Extension has been going on for about six months to this date, September 10, 1878, and in sinking two shafts to the depth of about eighty feet, and 250 feet apart, and at an expense of not to exceed \$4,000. The company have sufficient ore upon their dumps to pay for the erection of reduction works, of the capacity of forty tons per diem. With such a safe financial outlook, the company have no hesitancy in declaring that the public never had a better prospect presented for a safe and remunerative investment, and they therefore invite the most thorough examination, being confident of a favorable result. All information will be cheerfully furnished, and all facilities will be extended by the company's officers in San Francisco, and Arizona, and prospectus sent by mail to anyone seeking information, by addressing the company at their office, 32 Merchants' Exchange, San Francisco, California.

CALEDONIA SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 414 California Street. Geo. W. Beaver, president; R. Wegener, secretary; Chas. Farman, superintendent; Geo. W. Beaver, Robt. F. Morrow, John Skae, W. S. Hobart, L. S. Adams, trustees. Annual meeting, third Wednesday in August. No. of shares, 100,000. No. of feet, 2,188. Shares per foot, 45. No. of assessments, 24. Amount, 50 cents. Levied, Sep. 16, 1878. Total assessments, \$1,495,000. Bullion yield, \$345,215.26. Listed on San Francisco Stock and Exchange Board.

The Caledonia lies between the Overman and the Justice, in both of which valuable ore bodies have been developed, and both of which have stepped to the front as bullion-producing mines. The shaft of the Caledonia is now nearly on a line with those of the Comstock, as one after another has been located further to the east. The mine has in the past produced considerable ore, which has yielded to date \$345,215.26, in bullion. Lately the new works have received particular attention as well as the new shaft. Ample buildings have been erected, and powerful machinery put in operation.

Letter from the superintendent, dated September 21st, 1878, says: "Since last report the lateral drift, 1400-foot level, has been extended 35 feet; face in hard vein porphyry. North drift, 1600-foot level, has been extended 28 feet, and the crosscut 26 feet. Face of south drift shows some stringers of quartz, but most of the material is clay and porphyry. Crosscut is in very hard porphyry. The water is nearly all out of joint winze, and I think we will be able to resume it next week."

The main north drift on the 1600-foot level is still advancing, the face in lively vein matter. The east crosscut from this drift is also making good headway, the face in blasting rock. The south drift, on the 1400-foot level, is also being pushed vigorously forward, the face in quartz and vein-matter.

CALIFORNIA GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; C. Gurnee, J. M. Walker, C. Reis, R. F. Bunker, R. G. Brown, trustees. No. of shares, 100,000. No. of feet, 1,500.

This claim, which covers an area of 1,500 by 100 feet, lies between the Standard and the Spaulding, both noted mines in Bodie. The California is situated on the same ledge as the Belvidere and Bulwer, and is one of the earliest locations made in the district. A shaft has been carried down to a depth of 100 feet, following the vein, which inclines at an angle of about 85 degrees. The ore streak, which was but eighteen inches thick at the surface, has expanded to four feet at the bottom of the shaft. It is an auriferous ore, yielding at the rate of \$25 in gold to the ton. This ore, which is being reduced, surrenders its gold freely under the simple mill process, the cost of extraction and milling being small. The position of this ground, as will be seen by an inspection of the map, is most favorable, and there is not a claim in the district that makes a better showing for the work done upon it than the California.

CALIFORNIA MINING COMPANY.

VIRGINIA MINING DISTRICT, NEVADA.

Office, Room 23, Nevada Block, San Francisco. George Wallace, president; C. P. Gordon, secretary; W. H. Patton, superintendent; George Wallace, R. H. Follis, S. Heydenfeldt, Cornelius O'Connor, Thomas H. Williams, directors. Annual meeting, third Wednesday in January. No. of shares, 540,000. No. of feet, 600. No. of dividends, 28. Total dividends, \$29,160,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The California has proved to be one of the most important mines on the famous Comstock Lode. The average value of the 127,540 tons of ore extracted during 1876, was \$105.07, which was only 73½ per cent. of the assay value. The total product of bullion during that year, was \$13,400,841, of which \$6,488,640 was gold and \$6,912,203 silver. The 217,432 tons of ore extracted during 1877, averaged \$88.49½ per ton, at 73 3-10 per cent. of assay value. The bullion produced amounted to \$18,924,850, of which \$9,386,745 was gold and \$9,538,105 was silver. The dividends paid to stockholders during the year, amounted to \$12,960,000.

During the past year a great deal of work has been done on the 1400-foot level, but owing to the crushing of timbers in drifts and crosscuts, the extent of the ore body was not fully ascertained.

A large working drift has been run in the solid west wall on the 1550-foot level, extending the whole length of the mine, connecting with the main shaft on the south and with the Ophir mine on the north. All the crosscuts will be continued to this drift, and from it access will be had to all parts of the level. This great work has been done, owing to the swelling and settling of the ground adjacent to the ore body. Winze No. 3, on this level, extends to the 1650-foot level, by which men and material are conveyed down to that and the 1600-foot levels.

The east clay of the ore body has been followed northeast from this No. 3 winze for one hundred and twenty feet. Alongside this clay is a seam of ore eighteen feet thick, and of fair quality. It is east of what has heretofore been considered the east clay of the lode. This valuable body of ore widens as developed to the north. The east wall of the ledge has not been reached on this level.

The sill floor of the 1600-foot level has been extended from the north to the south boundary of the mine. There is a space of fifty feet on the east, and nearly forty feet on the west, on winzes 5 and 6 on this level, that contain poor ore, but above and around it the ore is of good quality. A large drift on this level connects with the Ophir shaft, which affords good ventilation for a large part of the mine. The east wall of the lode has not been reached in any of the crosscuts in the northern four hundred feet on this level. All these crosscuts terminated in a solid body of poor quartz. The greatest extraction of ore has been on this level, where the ore body is very wide and heavy, and had to be worked rapidly, to avoid crushing of timbers and consequent great loss of ore.

On the 1750-ft. level the ore body is very wide, and the vein well defined, with regular walls. The greatest part of the ore is of too low a grade to pay for mining and milling. The good ore is confined to the east wall, and its greatest width does not exceed 28 feet.

In addition to the operations on the several levels, an immense expense has been incurred in maintaining the underground works in good condition, owing to the fact that, in working such large bodies of ore, the constant pressure of the ground surrounding the worked-out stopes is so great, that it requires a large force of men to keep the drifts and winzes in a condition for the extraction of the ore. This expense will hereafter be avoided by running all lateral drifts outside of the ore body, away from the swelling and settling ground.

The main shaft (the Consolidated Virginia) has been sunk to the 1850-ft. level. The heavy flow of water has continued throughout the year, and remains unabated—amounting to 43 to 45 inches, miners' measurement, about 10 inches of which issues from the C. & C. drift on the 1500-ft. level. The mine is, however, comparatively dry on all its levels. Each hoisting compartment of this C. & C. shaft is fitted with three cages, one over the other, by which means three tons are hoisted in each compartment, at each trip. Two of these cages are loaded at the same time, and are also unloaded simultaneously. The floors and tracks leading from the surface station to the ore-houses are laid one over the other, to correspond with the cages.

All the arrangements of this shaft, such as the main building, ore-houses, hoisting and pumping machinery, pumps, water-tanks, etc., have been kept in first-rate condition; and a large air-compressor, at an expense of \$25,000, has been added. A branch track of the Virginia and Truckee Railroad passes on two sides of the Company's works, and enables it to transport materials and ores cheaply and expeditiously. All the bullion is melted and assayed on the ground.

According to the report of the Secretary of the Company, the ores extracted and worked in 1877 (213,683 tons) cost an average of \$25.70 4-10 per ton. The gross product of the mine for that year was \$18,924,850.27. The labor for the extraction of each ton of ore averages \$3.57½. Hoisting it out of the mine costs \$5 7-10 cents. Its reduction at the mills cost \$10.38 9-10 per ton, and is now reduced to \$9 per ton. The silver extracted during 1877 weighed 464½ tons. The gold weighed about 83 tons. The value of the gold was \$9,386,745.47, and of the silver \$9,538,104.80. The wages paid for labor during that year amounted to \$776,362, of which \$712,536 was to miners at \$4 per day, \$11,756.50 for laborers at \$3.50 per

day, and \$7,173 for mechanics at \$6 per day. The average wages of every man employed on the mine is \$4.33 6-10 per day.

The following table gives the list and amounts of dividends paid by this Company :

NUMBER.	DECLARED.	AMOUNT.	PER SHARE.	AMOUNT PAID.	TOTAL.
	1876.				
First.....	May	\$2 on 540,000 shares.	\$ 2	\$1,080,000	
Second.....	June	" " "	4	1,080,000	
Third.....	July	" " "	6	1,080,000	
Fourth.....	Aug.	" " "	8	1,080,000	
Fifth.....	Sept.	" " "	10	1,080,000	
Sixth.....	Oct.	" " "	12	1,080,000	
Seventh.....	Nov.	" " "	14	1,080,000	
Eighth.....	Dec.	" " "	16	1,080,000	\$8,640,000
	1877.				
Ninth.....	Jan.	" " "	18	1,080,000	
Tenth.....	Feb.	" " "	20	1,080,000	
Eleventh.....	March	" " "	22	1,080,000	
Twelfth.....	April	" " "	24	1,080,000	
Thirteenth.....	May	" " "	26	1,080,000	
Fourteenth.....	June	" " "	28	1,080,000	
Fifteenth.....	July	" " "	30	1,080,000	
Sixteenth.....	Aug.	" " "	32	1,080,000	
Seventeenth.....	Sept.	" " "	34	1,080,000	
Eighteenth.....	Oct.	" " "	36	1,080,000	
Nineteenth.....	Nov.	" " "	38	1,080,000	
Twentieth.....	Dec.	" " "	40	1,080,000	12,960,000
	1878.				
Twenty-first.....	Jan.	" " "	42	1,080,000	
Twenty-second.....	Feb.	" " "	44	1,080,000	
Twenty-third.....	March	" " "	46	1,080,000	
Twenty-fourth.....	April	" " "	48	1,080,000	
Twenty-fifth.....	May	" " "	50	1,080,000	
Twenty-sixth.....	June	" " "	52	1,080,000	
Twenty-seventh.....	July	\$1	53	540,000	
Twenty-eighth.....	Aug.	\$1	54	540,000	7,560,000
					\$29,160,000

CHALLENGE CONSOLIDATED MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; Thomas G. Taylor, superintendent; A. K. P. Harmon, J. D. Fry, William Sharon, J. H. Dobinson, C. L. Weller, trustees. Annual meeting, third Thursday in November. No. of shares, 50,000. No. of feet, 90. Shares per foot, 555 5-9. Listed on San Francisco Stock and Exchange Board.

CHAMPION MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 21, 419 California Street. H. Epstein, president; John Crockett, secretary; Lee H. Newton, superintendent; H. Epstein, A. P. Williams, R. G. Brown, John Wagner, Robert Harrison, trustees. Annual meeting, second Tuesday in July. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 666 $\frac{2}{3}$. Listed on San Francisco Stock and Exchange Board.

This mine was incorporated July 25th, 1878. Adjoins the Bodie on the south; has a two-compartment shaft down to the depth of 110 feet; has a well-defined ledge three feet in width, giving high assays. Work on this property will be pushed in a very vigorous manner, the management having on the ground a first-class 12-horse-power donkey engine, capable of sinking to a depth of 800 feet, and which has been already set up and commenced operations. In view of the developments made near by, a paying mine is almost sure to be opened up on this ground in a very short time, as it lies directly on the mineral belt that has so enriched the Bodie claim. The very position of this ground, even were no exploring work done, ought to invest it with great intrinsic value.

CHEROKEE FLAT BLUE GRAVEL COMPANY.

CHEROKEE FLAT MINING DISTRICT.

Office, Room 6, 318 Pine Street. E. B. Pond, president; J. W. Clark, secretary; Charles Waldyer, superintendent; E. B. Pond, H. E. Robinson, L. Verarla, H. Kozminsky, E. D. Morgan, trustees. Annual meeting, first Saturday in September. No. of shares, 31,200. No. of acres, from 600 to 700. No. of assessment, 39. Amount, 5c. Levied, April 17th, 1878. Total assessments, \$29,640.

The Cherokee Flat Blue Gravel Company own a valuable track of gravel-bed, located at Cherokee Flat, Butte County, California. This property adjoins the claims of the Spring Valley Company, which have been worked profitably for many years. As soon as satisfactory arrangements can be made for a water supply, this company will proceed to develop the ground held by it.

CHEROKEE MINING COMPANY.

DEVIL'S OATE, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; N. C. Hall, superintendent; A. K. P. Harmon, W. S. Hobart, Joseph Trench, W. E. Dean, Martin White, trustees. Annual meeting, last Thursday of June. No. of shares, 60,000. No. of feet, 544. Shares per foot, 110 2-5. Listed on San Francisco Stock and Exchange Board.

CHOLLAR-POTOSI MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; J. L. Requa, superintendent; A. K. P. Harmon, J. D. Fry, J. H. Dobinson, C. L. Weller, Alpheus Bull, Wm. Norris, A. P. Wade, trustees. Annual meeting, second Monday in July. No. of shares, 28,000. No. of feet, 1,400. Shares per foot, 20. No. of assessment, 15. Amount, \$5. Levied, Sep. 5, 1878. Total assessment, \$1,759,000. No. of dividend, 44. Amount, \$1. Declared, February 5, 1872. Total dividends, \$3,080,000. Bullion yield, \$14,677,031. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Chollar-Potosi holds the long stretch of the Comstock lying between the Hale & Norcross and the Bullion, constituting a sort of middle ground between the Gold Hill and the Virginia group of mines. The Potosi croppings were among the most prominent on the mother lode, and, as they made a fair showing of good ore, work was commenced here as early as the Fall of 1859. Two years later, Governor Blasdel put up a mill for reducing the ores from this ground, and which yielded such handsome profits that he was soon enabled to retrieve his fallen fortunes. From that date until quite recently this mine has yielded ore at the rate of about 150 tons per day, and which for a long time averaged \$40 to the ton. At a later period the ore here deteriorated somewhat, averaging not over \$18 or \$20 per ton, at which rates it held until some six months ago when it finally gave out, leaving the company without further reserves in their mine. During the year ending June 1st, 1877, there were extracted 39,439 tons of ore from this mine, the quantity raised the following year having amounted to but 13,201 tons.

During the past year, the tax on the ore yield of this mine for prospecting and repairs has been at the rate of \$3.84 per ton—the proportion contributed towards expense of the Chollar-Norcross-Savage, or combination shaft, having been at the rate of \$6.50 per ton—making a total on account of these two items of \$10.34 per ton. This heavy expenditure, coupled with diminished revenues, has, as a matter of course, rendered assessments necessary to keep the mine running. But these may well be borne, in view of the good history presented by this property, which has disbursed over three million dollars in dividends to the shareholders; and from the further fact, that a resumption of ore extraction is likely to occur at any moment. The Chollar main incline has now reached a depth of 1,785 feet, the entire sinking for the greater portion of the past year having been in hard granite. The incline engine has power to do the lifting for a further distance of 500 feet or more. In January last, the drift east on the 1,785-ft. level was connected with the new combination shaft, greatly promoting ventilation in both. This drift, which is 1,390 feet long, was for 125 feet in west-country rock and clay, the remainder being in vein material, affording evidence of proximity to ore at various points along it. Upon the completion of this drift, deep prospecting from the Chollar incline was suspended, except running the pump a small portion of the time to keep the lower works free from water. Further exploration of the ground in depth will hereafter be carried on from the combination shaft, the drift being meantime kept in repair for purposes of ventilation, which will be attended with but little expense.

THE CHOLLAR-NORCROSS-SAVAGE, OR COMBINATION SHAFT.

As the Chollar-Potosi Company were the prime movers in the inauguration of the above enterprise, a brief description of this work becomes proper in connection with these remarks upon their mine. In speaking of this shaft, the initial letters C. N. S. are, for the sake of brevity, frequently used instead of the full name. This work was projected and its construction commenced early in 1875. When it is considered that the dip of the Comstock is to the east, and that work through inclines is always prosecuted at a disadvantage, and with a loss of power besides that expended on the increase of distance; and, above all, that depth is now the great requisite to success on the Comstock, the wisdom of going nearly a mile to the east of the original croppings, and sinking a perpendicular shaft which shall at once overcome all these obstacles and the more readily gain the desired end, is apparent. The work has been commenced on a plan commensurate with the great objects to be attained. In its prosecution, the wisdom gained by the whole past is being applied. The site possesses all the advantages sought. It is central to the companies, convenient of access, and has all the dump-room that will be needed. It is connected with the Virginia and Truckee Railroad by a side track. The slope of the hill is taken advantage of in the construction of the building, and placing the machinery so that the hoisting engines are on a level with the sheaves, which are on the top of a wall of hewn stone, 30 feet in height, and carry the cable over to the center of the shaft. This is the largest shaft yet sunk on the Comstock. It has four compartments, the three hoisting compartments being each 5x6 feet, and that for the pumps 6x7 feet. These arc being timbered with 14x14 mountain spruce, which outlasts other wood for such purposes. To construct this shaft requires an excavation about 9x30 feet. The character and quality of the permanent machinery placed at this shaft may be inferred from the following statistics of the pumping apparatus: The engine is a vertical compound of 700-horse power, and capable of

running a double column of 15-inch pumps, at least 4,000 feet. These pumps are equivalent to a single column of 18 inches. The engine is controlled by the Davy differential valve, and made to make one stroke in 15 minutes, or 12 strokes per minute, or any number of strokes between the two extremes, as may be required. The stroke is made in the same length of time, whether the engine be running fast or slow—the engine consuming no steam when not running. The attachment is direct to the bishop-head of the bob, thus doing away with all unnecessary friction and liability to break of intermediate gear. The initial cylinder is 32 inches in diameter, and has a stroke of 10 feet 10 inches. The expansion cylinder is 65 inches in diameter, and has 8 feet stroke. These cylinders are placed vertically, side by side, the attachment from the larger one being made nearer the shaft of the bob. The cost of this engine, equipped with its double columns of pumps, 2,000 feet, was \$400,000. The works are supplied with water by the Virginia and Gold Hill Water Company, through a 10-inch main. It is unnecessary to enlarge upon this, the greatest mining project of the age, which is calculated to reach and tap the Comstock 4,000 feet below the surface, and to go the full depth of a mile if necessary, in order to accomplish the purpose sought. That the project is feasible and warranted, no person familiar with deep mining on the Comstock can doubt.

The entire expenditure upon this shaft to date amounts to upwards of a million dollars, of which the following compose the more considerable items, viz: Machinery, pumps, etc., \$400,000; labor, tools and supplies, \$250,000; timber, lumber, etc., \$100,000; wood, \$40,000; foundations, \$25,000; a large sum in the aggregate having been paid out on account of buildings, reservoir construction, water, interest, taxes, insurance, etc. This shaft has now reached a vertical depth of 2,400 feet, and is being sunk at the rate of about three feet per day. At the 2,000-foot level the eastern country was passed through and the regular Comstock vein material entered, and in this the shaft is still continued. Water has been found to increase steadily with depth, coming in now at the rate of 150 tons per day. Heretofore it has been raised with skeets. But preparations are now being made to bring it up with pumps, the excavations for the pumps in the main shaft below the 1,600-foot level being in progress, and near completion, and in a short time the great iron tubes will be in place ready for service. On the above level the north drift is now being advanced at the rate of five feet per day towards the Sutro Tunnel, with which it is to be connected for drain purposes. When this connection is made and the pumps in position the water will be lifted no higher than the 1,600-foot level, being there emptied into the tunnel. So far, sinking has been carried on without air compressors or power drills, all of which will soon be required. Tolerable ventilation, even on the lower levels, has heretofore been secured through connections with the Chollar drift on the 1,700-foot level. All the machinery connected with this great pit is in perfect order and working well, having capacity for all duty required in sinking to a depth of 3,500 feet. It is likely that all operations in Chollar, Norcross and Savage will, within the year, be carried on through this shaft, these companies beginning already to realize in part the many advantages to be derived from its construction.

CHRISTY MILL AND MINING COMPANY.

HARRISBURG DISTRICT.

Office, 310 Pine Street. O. F. Giffin, president; Geo. R. Spinney, secretary; H. S. Lubbock, superintendent; O. F. Giffin, J. H. Wise, W. H. Graves, W. M. Lubbock, R. N. Graves, trustees. Annual meeting, third Thursday in September. No. of shares, 60,000. Bullion yield, \$200,000.

COLORADO RIVER COPPER AND GOLD MINING COMPANY.

EMPIRE FLAT, YUMA COUNTY, ARIZONA.

Office, Rooms 6 and 7, 211 Sansome Street. I. C. Bateman, president; H. Augustus Whiting, secretary; Joseph Richards, superintendent; I. C. Bateman, H. H. Allen, Oliver Smith, H. F. Smith, T. C. Lampe, trustees. Annual meeting, second Monday in May. No. of shares, 50,000. No. of feet, six mines of 1,500 feet each—total, 9,000 feet. Shares per foot, 5-5-0. No. of assessment, 1. Amount, \$12,500. Levied, April 11th, 1878. Total assessments, \$12,500. Bullion yield, \$808.

There is a five-stamp mill on this mine, which has just commenced work, the production to date consisting of one bar of gold, of the value above stated.

COMANCHE GOLD MINING COMPANY.

BENTON, MONO COUNTY, CALIFORNIA.

Office, 37 Nevada Block. Geo. B. McAneny, president; W. W. Traylor, secretary; Al Morgan, superintendent; Geo. B. McAneny, W. M. Lent, Jno. F. Boyd, J. B. Fargo, E. McGary, trustees. Annual meeting, first Monday in May. No. of shares, 50,000. No. of assessment, 1. Amount, 50 cents. Total assessment, \$25,000. No. dividend, 4. Amount, 20 cents. Declared October 20, 1877. Total dividend, \$47,500. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is one of a number belonging to the same company. It is an old location, but was purchased by the present company about two years ago, and was incorporated in 1877. Its ores are silver and copper, and produce what is known on this market as base bullion, ranging from 350 to 800 parts of silver to the 1,000. It produces no gold. This bullion is all purchased by European smelters and refiners. The company have first-class hoisting and pumping works, and extract their ores by means of a two-compartment shaft, sunk to the depth of 400 feet, in which there are drifts every 70 to 100 feet.

COMANCHE GRAVEL MINING COMPANY.

COMANCHE, CALAVERAS COUNTY, CALIFORNIA.

Office, Room 6, 240 Montgomery Street. R. D. Hopkins, president; A. W. Robinson, secretary; Hiram Peasley, superintendent; R. D. Hopkins, S. W. Howland, E. F. Dennison, J. Q. Garfield, A. W. Robinson, trustees. Annual meeting, April 29. No. of shares, 50,000. No. of feet, one mile on the river.

CONCORDIA MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; Wm. M. Stewart, Wm. F. Herrin, Sherwood F. Gorham, Frank Pugliabue, F. K. Eeclitel, trustees. Annual meeting, first Monday in March. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

This mine is located in Bodie District, next to the Good Hand and Red Cloud. It contains 500 feet, and has been developed to the depth of 112 feet, or thereabouts, on the incline. Prospecting is continuing with good indications of valuable developments.

CONFIDENCE SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY NEVADA.

Office, 414 California Street. R. F. Morrow, president; R. Wegener, secretary; Robert F. Morrow, George W. Beaver, J. H. Dobinson, A. K. P. Harmon, L. S. Adams, trustees. Annual meeting, second Friday in November. No. of shares, 24,000. No. of feet, 130. Shares per foot, 192. No. of assessment, 11. Amount, 50c. Levied, April 10th, 1878. Total assessments, \$256,320. Total dividends, \$78,000. Declared, May 1st, 1865. Bullion yield, \$910,618.36. Listed on San Francisco Stock and Exchange Board.

CONSOLIDATED AMADOR MINING COMPANY.

AMADOR COUNTY.

Office, 426 California Street. David D. Colton, president; Frank B. Latham, secretary; David T. Davies, superintendent; D. D. Colton, E. J. Crane, M. S. Latham, J. D. Fry, Chas. E. Green, trustees. Annual meeting, first Monday in February. No. of shares, 30,000. No. of feet, 4,988. No. of dividend, 32. Amount, 20c per share. Declared July 9, 1878. Total dividend, \$8,000. Bullion yield, \$1,334,530. Listed on San Francisco Stock and Exchange Board.

CONSOLIDATED DORADO MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.—Incorporated, May 27, 1878.

Office, Room 4, 309 California Street. John McDougall, president; Charles A. Harris, vice-president; Pacific Bank, treasurer; J. M. Buffington, secretary; Phillip Corcoran, superintendent; John McDougall, Charles A. Harris, C. H. Silliman, John Wilmshurst, Phillip Corcoran, trustees. Capital stock, \$10,000,000. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 26. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This company own and are developing the Baldwin, Holmes No. 1 and Holmes No. 2, contiguous mining claims, deeded to the company by the original locators. These claims are located in the most promising portion of the Gold Hill district, being entirely surrounded by active and well-known mining enterprises. On the northeast corner the Overman company are sinking their new shaft, which is the largest on the Comstock; on the east the East Alta company are making arrangements to prospect on an extensive scale; and the well-known Succor and Silver Hill mines bound this property on the south; the Alta and Benton Con. are but 200 feet distant on the west. The three-compartment shaft on the Baldwin is in good easy working ground of a favorable character, being in ledge matter giving good assays. Ample hoisting works and machinery have been erected, capable of thoroughly developing the mine. The control is in the hands of capitalists and men of large business experience, recently from New Orleans. They have set aside as a working capital 3,500 shares of the capital stock.

CONSOLIDATED IMPERIAL MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; A. C. Hamilton, superintendent; A. K. P. Harmon, J. D. Fry, J. H. Dobinson, C. L. Weller, Alpheus Bull, William Norris, A. E. Wade, trustees. Annual meeting, first Wednesday in May. No. of shares, 500,000. No. of feet, 468. Shares per foot, .0683. No. of assessments, 6. Amount, 20c. Levied, April 9th, 1878. Total assessments, \$675,000. Bullion yield, \$126,287. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Consolidated Imperial now embraces all the claims between the Yellow Jacket and Bullion, except the Confidence and Challenge. It includes the Imperial, 183½ feet; Bacon, 65; Empire, 75; Eclipse, 70; Trench, 20; Bowers, 20; Consolidated Gold Hill Quartz, 34½. This consolidation was effected April 1st, 1876, at which time the capital stock was increased to its present amount. All of the above locations have yielded more or less ore, which has been taken from near the surface, and along the line of croppings. The Imperial and Empire ground has been prospected by means of a vertical and incline shaft, sunk to a depth of 2,400 feet, and much drifting and crosscutting carried on in the various levels opened above. The west cross-cut, No. 3, on the 2,400-foot level, has lately entered some fine-looking quartz mixed with porphyry. Cutting into this formation released so much water that, with only small donkey pumps to keep down the flow, it was deemed advisable to suspend work at this point for the present. The appearance of the rock exposed, justifies the hope that ore will soon be encountered in that direction. The face of the cast drift, on the same level, is being advanced in vein matter of a promising character, while the north drift on this level, running in Alpha ground,

is in quartz mixed with clay and porphyry—the prospects on this level being on the whole very cheering. Many of the levels in this mine have been connected by incline winzes, which have served to prospect the ground and promote ventilation. Through these various passages and the connection established with the Yellow Jacket mine, on the 2,400-foot level, the lower works of the Imperial are cool and comfortable, and everywhere free from foul air. Recently, the main shaft of this mine has been retimbered for a distance of eight hundred feet, all the defective portions of the machinery having been overhauled or replaced by new. As the mine makes a good deal of water, over one hundred thousand gallons every day, the pumping apparatus has also required extensive repairs and additions, the whole being now in excellent order. The machinery here is, in fact, first-class, while the prospects of the company are full of promise, the several claims embraced in the consolidation having, in times past, been among the most prolific on the Comstock Lode.

CONSOLIDATED VIRGINIA MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 26 and 27, Nevada Block, 309 Montgomery Street. Charles H. Fish, president; A. W. Havens, secretary; W. H. Patton, superintendent; Charles H. Fish, George Wallace, S. Heydenfeldt, George R. Wells, Cornelius O'Connor, trustees. Annual meeting, second Thursday in January. No. of shares, 540,000. No. of feet, 710. Shares per foot, 60½. No. of assessments, 15. Levied, June 11, 1873. Total assessments, \$174,600. No. of dividends, 46. Amount, \$540,000 (\$1). Declared, June 7th, 1878. Total dividends, \$41,040,000. Bullion yield, \$59,613,961.30. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, California Stock Exchange Board.

The Consolidated Virginia mine passed into the present management January 11th, 1872. For five years, from 1867 to 1872, a company worked the ground all the time, expending \$161,340.41 upon the property without realizing one dollar in return. At last it was forced to give way. The new management expended \$277,150.12 before it yielded them anything. It was a stubborn fight against the heat and barren porphyry—a steady pouring out of gold upon a hope, which continued altogether eight years, and which would have been abandoned in any other country but this, and by any other class of men in the world except Nevada miners. The old stock (only 108,000 shares) was worth but \$2 per share, and some who perforce accepted it for services rendered, bewailed their hard fortune. Since then, it has made them richer than they ever dreamed of being; and their word is held in great estimation because of their shrewdness in purchasing Bonanza Stocks when they were very low. At last, in a drift which was run from the Gould & Curry shaft, through the Best & Belcher mine into the Consolidated Virginia, the crest of the bonanza was cut. Explorations followed, and the more work that was done the more ore was exposed, until at length, in the Autumn of 1874, it was fully revealed that an ore deposit had been discovered, exceeding in extent and richness anything ever before found in a mine.

The fame of the Big Bonanza has, during the past four years, been spread throughout the civilized world. History has been searched in vain for the record of the discovery of a mineral deposit of such magnitude and richness. The developments and unprecedented yield of the Consolidated Virginia Mine have demonstrated to the world that neither the treasures of the Duke of Monte Cristo, nor the wealth of the diamond-gemmed caves of Golconda, are to be compared in value with this part of the Comstock. When, nearly four years ago, the local papers of Virginia City began to give partial accounts of the extent and richness of the ore body which was being developed in the Consolidated Virginia, men were incredulous. They could not get a rational conception of the millions which such a deposit contained, and refused to believe in its existence. One mining expert after another visited the mine and were shown through the levels. They went away and were compelled to give but partial accounts of what they had seen, for fear of being disbelieved if they told only half the truth. And even now there are thousands in the East and Europe who cannot be brought to a realizing sense of what has been proved to exist there. Still the problem was simple of solution, and the managers gave the public every opportunity of solving it. The Big Bonanza, so far as its extent was known, was cut up by drifts, crosscuts and winzes, into regular cubes, measuring 100 feet each way. It is well known that thirteen cubic feet of ore make a ton. Average assays were made of each cube, and hence the value of the deposit was ascertained as low down as the cubes extend. The statements made by the managers and visiting experts have been fully verified, and thousands in this country and in foreign lands who believed in the honesty of the statements made, and the integrity of the management, are to-day enjoying fortunes from moderate to princely, as the result of their early investment. If the stock reached a figure beyond its intrinsic value, the fact may be attributed to the excitement of speculation, and not to any misstatements on the part of those who developed the mine and dealt out the stock. For at all times, and under all circumstances, the fullest and frankest investigation was invited. The portions of the cubes which have thus far been stoped out, have fully verified by their return, the calculations made of their value.

On the 26th day of October, 1875, Virginia City was visited by a terrible conflagration, which swept away nearly one-half of the city, destroying the fine and extensive hoisting works and buildings of the Consolidated Virginia mine, together with its splendid 60-stamp mill, and a vast amount of supplies of various kinds. The (then) President of the mine, Mr. Edward Barron, in his annual report, under date of December 31, 1875, said:

“This misfortune compelled the stoppage of nearly all underground work and ore extraction,

and necessitated the cessation of bullion shipments until the hoisting works and other necessary buildings could be replaced. This has been done, and new works and buildings, superior to those destroyed, were erected in the short space of two months. To the great executive ability and indomitable energy of the Superintendent, Mr. James G. Fair, you are indebted for so early a replacement of the numerous and extensive buildings necessary to the proper working of the mine; and when the many and formidable obstacles which had to be overcome are taken into consideration, too much praise cannot be awarded."

The annual report of the Superintendent, Col. James G. Fair, of even date with the foregoing, said:

"The entire hoisting works, with ore house, have been rebuilt on an enlarged scale, with many improved conveniences in the various departments. A two story building, 100 feet by 50 feet, is in the process of erection, to be used for the assay and bullion department, and it is now about one-half completed. When finished there will be room and facilities for melting and assaying \$5,000,000 of bullion per month."

"A large extent of ground around and in the vicinity of the hoisting works has been purchased to give ample space for the storage of wood, timber and mine materials. By the acquisition of this ground the hoisting works now stand in a comparatively isolated situation, so that there will be but little danger from any fire except that which might originate on our own premises."

"For security against all fires, the works are surrounded by hydrants, with a good supply of fire hose, and there is an ample supply of water under a heavy pressure. I will also add that the City of Virginia is constructing a perfect system of water works. These works will surround us and give additional protection against fire."

"The Virginia and Truckee Railroad encircles us on three sides, so that our mine supplies are conveniently landed on the west, or upper side, and our ore is expeditiously shipped from the east, or lower side of the works."

"At the C. & C. shaft, buildings complete in every respect have been erected, and machinery for pumping and hoisting has been put in place and is now in full operation. In addition to the main building there is a blacksmith shop, a rope house, two large carpenter shops and one machine shop. The carpenter shops are supplied each with an engine and machinery—one of these shops being intended for the use of the Consolidated Virginia mine, and the other for the California mine. The machine shop is fitted up with engines, lathes, tools, etc.—one side of which is for the use of the Consolidated Virginia mine, and the other side for the California mine."

"A large area of ground immediately surrounding the site of this shaft has been secured, having been purchased at a heavy outlay. This shaft is situated 1,040 feet east of the Consolidated Virginia shaft."

The following extracts from the annual report of the President, Mr. Charles H. Fish, dated January 1, 1878, shows the total amount of bullion produced up to that time:

	Gold.	Silver.	Total.
1873	\$ 314,288.68	\$ 331,293.49	\$ 645,582.17
1874	2,063,438.13	2,918,045.92	4,981,484.05
1875	7,035,206.54	9,682,188.22	16,717,394.76
1876	7,378,145.76	9,279,504.11	16,657,649.47
1877	6,270,518.68	7,463,500.30	13,734,019.07
			\$52,736,129.52
First half of 1878			6,877,831.78
Total			\$59,613,961.30

Inventory of property at Virginia City:

CONSOLIDATED VIRGINIA MINING COMPANY.		
Real Estate		\$ 35,000.00
Hoisting Works		25,000.00
Assay Office and Superintendent's Office		60,000.00
Machinery		230,000.00
Supplies		19,988.51
Assay Supplies		1,069.89
Total		\$371,058.40
C. AND C. SHAFT.		
Real Estate		\$ 25,000.00
Hoisting Works, Pumps and Machinery		320,000.00
Supplies		29,526.54
Total		\$374,526.54

The work of re-timbering the shaft was commenced early this Spring, and the hoisting of ore necessarily almost entirely discontinued. The July and August dividends were in consequence passed.

The Consolidated Virginia and California joint shaft has been sunk to the depth of 2,000 feet, and a station set preparatory to opening the 1,950-foot level. The heavy flow of water has continued throughout the year, and remains unabated. This heavy flow of water, amounting to from 43 to 45 miners' inches, all comes into the shaft at a point 37 feet above the bottom of it, with the exception of about 10 inches that issues from the C. & C. drift, on the 1,500-foot level. The bottom of the shaft is now dry, and in very hard blasting rock.

Each hoisting compartment of this shaft is fitted with three cages, one over the other, which enables us to hoist three tons each trip in each compartment. A fourth cage is in readiness to be added to each compartment whenever required. Two of these cages are loaded at the same time, and they are also unloaded simultaneously, as the floors and tracks leading from the surface station to the ore houses are laid one immediately over the other, corresponding to the height and position of the cages.

All the appurtenances to this shaft, such as the main building, the ore houses, the hoisting and pumping machinery, the pumps, pump bobs, water tanks, etc., have not deteriorated in condition since my last annual report, but have rather been made more complete by such additions and changes as circumstances required; one of which is a large new air compressor, which has been constructed and put in place at a cost of at least \$25,000. Everything connected with this shaft has been constructed on a scale and in a manner commensurate with the large future requirements of the two mines. A branch track from the Virginia and Truckee Railroad passes on two sides of the works, in close proximity to them, and this enables us, in the most convenient and expeditious manner, to land wood, timber and other mine supplies, and to ship to mills the ore which is raised through this shaft; the former being landed on the upper side, and the latter being shipped from the lower side of the works.

The assay department, which has been in operation for nearly two years, has fulfilled the highest expectations as to its capacity for work and for economy in expense. In it has been melted and assayed, all the bullion which has been produced from this mine and from the California mine; and in the same time 40,484 assays of ore samples have been made for both mines.

The mine has disbursed in dividends the sum of \$41,040,000, as follows:

NUMBER.	DECLARED.	AMOUNT.	PER SHARE.	AMOUNT PAID.	TOTAL.
	1874.				
First	May 7	\$3 on 108,000 shares.	\$ 3	\$ 324,000	
Second	June 6	" " "	6	324,000	
Third	July 7	" " "	9	324,000	
Fourth	August 7	" " "	12	324,000	
Fifth	September 7	" " "	15	324,000	
Sixth	October 7	" " "	18	324,000	
Seventh	November 7	" " "	21	324,000	
Eighth	December 7	" " "	24	324,000	\$2,502,000
	1875.	" " "			
Ninth	January 7	" " "	27	824,000	
Tenth	February 6	" " "	30	324,000	
Eleventh	March 6	\$10 " " "	40	1,080,000	
Twelfth	April 7	" " "	50	1,080,000	
Thirteenth	May 7	" " "	60	1,080,000	
Fourteenth	June 7	" " "	70	1,080,000	
Fifteenth	July 7	" " "	80	1,080,000	
Sixteenth	August 7	" " "	90	1,080,000	
Seventeenth	September 7	" " "	100	1,080,000	
Eighteenth	October 7	" " "	110	1,080,000	
Nineteenth	November 5	" " "	120	1,080,000	
Twentieth	December 4	" " "	130	1,080,000	11,448,000
	1876.	" " "			
Twenty-first	January 5	" " "	140	1,080,000	
Twenty-second	February 5	" " "	150	1,080,000	
Twenty-third	March 4	" " "	160	1,080,000	
Twenty-fourth	April 4	\$2 on 540,000 shares.	34	1,080,000	
Twenty-fifth	May 4	" " "	36	1,080,000	
Twenty-sixth	June 5	" " "	38	1,080,000	
Twenty-seventh	June 30	" " "	40	1,080,000	
Twenty-eighth	August 4	" " "	42	1,080,000	
Twenty-ninth	September 4	" " "	44	1,080,000	
Thirtieth	October 4	" " "	46	1,080,000	
Thirty-first	November 3	" " "	48	1,080,000	
Thirty-second	December 4	" " "	50	1,080,000	12,960,000
	1877.	" " "			
Thirty-third	May 7	" " "	52	1,080,000	
Thirty-fourth	June 7	" " "	54	1,080,000	
Thirty-fifth	July 7	" " "	56	1,080,000	
Thirty-sixth	August 7	" " "	58	1,080,000	
Thirty-seventh	September 7	" " "	60	1,080,000	
Thirty-eighth	October 6	" " "	62	1,080,000	
Thirty-ninth	November 7	" " "	64	1,080,000	
Fortieth	December 7	" " "	66	1,080,000	\$3,640,000
	1878.	" " "			
Forty-first	January 7	" " "	68	1,080,000	
Forty-second	February 7	" " "	70	1,080,000	
Forty-third	March 7	" " "	72	1,080,000	
Forty-fourth	April 6	" " "	74	1,080,000	
Forty-fifth	May 7	\$1 " " "	75	540,000	
Forty-sixth	June 7	" " "	70	540,000	5,400,000
					\$41,040,000

CONSOLIDATED PACIFIC MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 507 Montgomery Street. J. G. McClinton, president; F. E. Luty, secretary; C. W. Mills, superintendent; I. G. McClinton, Samuel L. Theller, E. B. Dickinson, E. F. Preston, Nathan Atkinson, trustees. Annual meeting, third Saturday in August. No. of shares, 60,000. No. of feet, 1,400. Shares per foot, 42 C-7. Listed on San Francisco Stock and Exchange Board.

This property was, until recently, owned by Judge J. G. McClinton, who held it for over thirteen years, the title being of the most perfect kind. The claim is 1,400 feet long by a width of 300 feet, and covers four distinct lodes, viz: The Pacific No. 1, the Pacific No. 2, the Pacific No. 3 and the Sharon lode, with their respective extensions south. Its location is most favorable, being contiguous to the famous Bodie, Bulwer and Belvidere claims. It is one of the four producing mines of the district. Considerable work has already been done on this property, and further developments will be vigorously pushed forward. On Pacific No. 1 lode, the most easterly of the series, a shaft 50 feet deep has been sunk, showing good ore, the vein varying from eighteen inches to three feet in thickness throughout its entire depth. The ground has been stoped from this shaft northerly to the northern boundary of the claim; also south to a distance of 25 feet. The ore here produced milled from \$40 to \$200 per ton. On Pacific No. 2 lode a tunnel, commencing about 300 feet south from the northern boundary of the claim, has been run northerly on the vein 215 feet. This tunnel, which connects with an air shaft located 125 feet from its mouth, is now being run 20 feet further north, at which point a crosscut to Pacific No. 1 lode will be made. On Pacific No. 3 lode some surface cuts have been made, showing a fine vein of low grade ore. On the Sharon lode a prospecting shaft is now being sunk about 70 feet from the northern boundary, which, at a depth of only ten feet, shows very good milling ore. The main working shaft has been located between Pacific No. 1 and Pacific No. 2 lodes, 535 feet from the northern boundary of the claim, and is now being pushed rapidly downward. All the four lodes will be worked through this shaft. Ore will continue to be extracted through the tunnel on Pacific No. 2 as at present. This main shaft is located about 300 feet westerly from the Bodie shaft. As the ground is easily worked, operations can be advanced rapidly, and no trouble from water need be apprehended. About 40 tons of ore now at the mouth of the tunnel assay \$35.46 gold, and \$1.56 silver per ton. Ore taken from the shaft assayed \$65, and some taken from the open cuts in the northern end of the veins assayed from \$400 to \$800 per ton. It is safe to say that the Consolidated Pacific will eventually take rank among the best mines in the district, and that it will, in a very short time, pass from the list of mere self-sustaining to that of the dividend-paying mines of Bodie.

CROESUS GOLD MINING COMPANY.

AMADOR, AMADOR COUNTY, CALIFORNIA.

Office, 328 Montgomery Street. W. Seawell, president; T. B. Wingard, secretary; M. M. Culbert, superintendent; W. Seawell, B. R. Zantinger, trustees. Capital stock, \$5,000,000. No. of shares, 50,000. Shares per foot, 33½. No. of feet, 1,500.

CROWN POINT GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 10, Cosmopolitan Hotel. Charles L. Weller, president; James Newlands, secretary; Samuel L. Jones, superintendent; Charles L. Weller, James H. Dobinson, A. K. P. Harmon, W. S. Hobart, John P. Jackson, trustees. Annual meeting, first Monday in June. No. of shares, 100,000. No. of feet, 600. Shares per foot, 16½. No. of assessment, 35. Amount, \$100,000. Levied, Sep. 13, 1878. Total assessments, \$1,953,370. No. of dividend, 50. Amount, \$2 per share. Declared January 3, 1875. Total dividends, \$11,598,000. Bullion yield, \$29,753,119.48. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Crown Point lies next north of the Belcher, and is separated by the Kentuck from the Yellow Jacket. The works occupy the outlet to Crown Point Ravine, over which the Virginia and Truckee Railroad crosses on a trestle-work bridge. Wood is dumped from the track to the level of the top of the works, while timber and other supplies are delivered from a side track to the main buildings, over which also the ore is shipped for reduction. It is one of the Comstock mines that has in times past made a large and profitable production. Pay ore was found as near the surface as the 160-foot level, but the main body was struck on the 400-foot level in the east ledge, and from this the millions have been taken which have been distributed in dividends. Since the exhaustion of this ore body several years ago, the product of bullion has been much diminished, the amount turned out last year having been less than was made the preceding year, by \$144,000, but the expenses were reduced meantime in a much greater ratio, having been \$372,863 less during the year ending with June 1878 than they were the year before. The 2,000-foot level of the mine has been prospected extensively, and with satisfactory results, although the work has been at some points much retarded on account of the great heat and foul air. The quartz at this depth is livelier, and freer from porphyry, and yields better assays, while the stratification is more regular than was the case on the 1,700-foot level, the last one prospected above. The straightening up in the lower levels of the lode walls to their normal position, affords further and almost infallible evidence of proximity to another ore body. From the 2,000-foot level a winze has been put down to the depth of 2,300 feet, being 525 on the slope below the 2,000-foot level. From the bottom of this winze a drift is being run south to connect with a drift coming north from the 2,360-foot station of the Belcher drain shaft, which

connection is nearly made, and will, when effected, greatly promote ventilation, and facilitate the drainage of both mines, this shaft being sunk by the two companies on joint account. A drift is also being driven north from the bottom of this winze along the course of the vein to the northern boundary of the mine. This is also in a state of forwardness, having been advanced latterly at the rapid rate of eight feet per day, and when completed, a series of cross-cuts will be run on the vein to determine its value on this level. The amount of exploration done in this mine the past year has been large, over 2,700 feet of cross cuts and new drifts having been run, 1,100 feet of raises having been made and winzes sunk, the old drifts cleaned out and repaired, having reached a lineal extent of 1,800 feet. The shaft and incline have meantime been kept in good repair, large sections having been retimbered, much new machinery has been added to the mine, including a new air-compressor, an air-hoisting engine, etc., the entire disbursements of the company for the year having reached \$575,391. The company own the Rhode Island Mill, a large and well appointed structure, which for the past year has been rented out for \$1,500 per month. When cross cutting comes to be prosecuted on their lower levels, the company confidently expect that the services of this mill, and most likely others besides, will be required for the reduction of their own ores.

From the old workings on the upper levels of the mine there were extracted during the past year 7,829 tons of ore, which yielded \$133,500. This production, notwithstanding the ore was of rather low grade, has been attended with considerable net profit. As the working of the Crown Point, including pumping, will soon be done through the shaft put down by this company and the Belcher, current expenditures will be materially curtailed thereafter, it being estimated that the cost of running the company's machinery will then be reduced one-half. This shaft, which has now reached a depth of 2,360 feet, is a splendid piece of work, being substantially timbered and supplied with first-class hoisting works.

CROWN POINT RAVINE GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 4, 309 California Street. J. J. Hucks, president; J. M. Buffington, secretary; J. H. Maynard, J. J. Hucks, Geo. Hearst, James R. Lee, Peter Mulloy, trustees. Annual meeting, first Monday in September. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50. No. of assessments, 5. Amount, 10 cents. Levied, November 24, 1877. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The Crown Point Ravine mine lies west of and adjoining the Yellow Jacket and Kentuck and is on the well-known West Ledge. This ledge is found to be somewhat compressed where it is intersected by the ravine from which the mine takes its name, but rapidly widens out when a little distance is gained, preserving all its original characteristics. The claim reaches from the ravine 1,200 feet north. A shaft has been sunk near the ravine 300 feet, from which a drift has been run 500 feet, cutting the ledge, which is broad and well-defined, carrying a clean, lively quartz, with streaks of high grade ore, and being lined with a heavy clay selvage, denoting its perfect and permanent character. This 500-foot drift, which was all in vein matter, cut the ledge when in a distance of 240 feet west from the shaft. From the 300-foot station a lateral drift was run south 175 feet. From this drift three cross-cuts were carried through the ledge which ranged from 12 to 15 feet in thickness. The lode matter here consisted of an excellent quartz, which everywhere gave low assays, some of the richer streaks assaying from \$50 to \$300 per ton, the vein material here being of precisely the same kind as that found in the Crown Point and Yellow Jacket mines at corresponding depths. This stratum of mineral-bearing quartz lies next and under the easterly wall of the lode. On this level a drift was also pushed west 240 feet, when the water came in so strong as to force a cessation of work at that point. This drift failed to reach the west wall of the lode, nor did it encounter the black dike so often met with, and sometimes so troublesome in other mines on the Comstock. With a view to recommencing work here, a pump has been ordered, and is now in course of construction, and which, when completed, will be at once brought into service. This pump will have capacity to handle all the water the mine will be likely to make until a very great depth is reached. In April last the company put up steam-hoisting works, after which the work of sinking the main shaft, which had been suspended, was resumed. The shaft will be sunk to a depth of 400 feet when further crosscutting will be done, in the confident expectation that a good body of pay ore will be found on that level, as the lode has shown a constant tendency to expansion with downward exploration, also improving in depth, with many rich stringers making in from both sides. The position of this ground, with relation to the Crown Point and other standard mines gives it importance independent of the good ore indications developed in its lower workings. This property is held largely by San Francisco investors who have unbounded faith in its future.

COSMOPOLITAN MINING COMPANY.

DEVIL'S GATE, NEVADA.

Office, Room 2, Nevada Block. Geo. S. Dodge, president; M. Landers, secretary; Jno. F. Egan, superintendent; Geo. S. Dodge, A. W. Rose, Jr., Jno. Landers, Butler Burris, Geo. W. Brittan, trustees. Annual meeting October 11th. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 5. Total assessment, \$70,000. Bullion yield, \$3,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

This mine is situate near the Occidental, and was located in 1870. The company have United States patent for their ground. It is worked by a tunnel, which is at present about

2,000 feet in length, with numerous lateral drifts and upraises, some of the latter reaching to the surface, and affording good ventilation. They have expended nearly \$73,000 in developing this mine, which is half a mile east of the Comstock, and claims to have an ore-body quite distinct from that lode.

COSO CONSOLIDATED MINING COMPANY.

INYO COUNTY.

Office, 410 California Street, room 17. J. L. Armstrong, president; W. H. Allen, secretary; J. L. Armstrong, A. H. Yeazell, H. A. Sweet, A. C. Wightman, trustees. Annual meeting, 11th of June. No. of shares, 100,000. No. of assessment, 6. Amount, 10c. Listed on San Francisco Stock and Exchange Board, California Stock Exchange Board, and Pacific Stock Exchange.

COUPON MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, 80 Nevada Block. John B. McGee, president; Daniel Buck, secretary; Wm. T. Robinson, superintendent; John B. McGee, Tod Robinson, E. M. Hall, C. H. Maddox, A. J. Blair, trustees. Annual meeting, last Tuesday in November. No. of shares, 100,000. No. of feet, 1,500x600.

DARDANELLES CONSOLIDATED GRAVEL MINING COMPANY.

FOREST HILL, PLACER COUNTY, CALIFORNIA.

Office, Room 13, 328 Montgomery Street. T. C. Wedderspoon, president; Wm. Letts Oliver, secretary; Joseph McGillivray, superintendent; A. Borland, T. C. Wedderspoon, J. M. Havcn, W. L. Oliver, J. McGillivray, trustees. No. of shares, 30,000. No. of acres, 312. Bullion yield, \$3,000,000 to \$4,000,000.

This is one of the historical mines of the State. Commencing in 1853, it was worked for a number of years as a drift claim, during which there was taken from it nearly \$2,000,000, the profits on which enriched the several owners. It was afterwards worked by the hydraulic process, but with the inefficient appliances and in the imperfect manner incident to the times. Appurtenant to the estate is a water right and ditch, which materially enhance its value. A little over one year ago, this property changed ownership, passing into the hands of the present company, who placed it under the management of Mr. Joseph McGillivray. This gentleman, who brought into the company's service a long and successful experience as a hydraulic miner, proceeded, with his accustomed energy and good judgment, to repair, extend, and otherwise improve the property. The ditch was cleaned out along its entire length, greatly increasing its capacity for the delivery of water. Two iron pipes, each 22 inches in diameter, were laid down for carrying water into the mine. Drifts were run, and immense quantities of auriferous gravel broken up with powder-blasts, in readiness for washing when the rainy season set in. Mr. McGillivray, having made a satisfactory production during the past working season, has, since it ended, employed a considerable working force in making further needed improvements on the property, and putting the mine in the best possible condition for the next washing season, now close at hand, and during which he expects to make a much larger clean-up than he did last year. The gravel in this claim is exceptionally rich, and there is enough of it to last a great many years under the most exhaustive system of washing practicable. Having their own water, this company avoids the heaviest item of current expenditure in this department of mining. With their entire property in good repair, and their mine well opened and equipped, the net earnings of this company ought to be large in the future.

DAY SILVER MINING COMPANY.

JACK RABBIT, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. Delos Lake, president; J. W. Pew, secretary; J. B. McGee, superintendent; M. J. McDonald, Delos Lake, E. Eyre, C. B. Gould, H. A. Fox, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of assessment, 2. Amount, 30c. Levied, Sept. 19, 1878. Total assessment, \$55,000. Bullion yield, \$77,477.58. Listed on San Francisco Stock and Exchange Board.

The district in which this property is located, and which is comparatively new, lies in Eastern Nevada, not far from the western boundary of Utah Territory. It has become quite conspicuous for the rich silver-bearing deposits lately discovered within its borders, the most of these consisting, like those in the Day mine, of smelting ores. The attempts made to mill these ores have resulted in extracting only about 65 per cent. of the silver they contain. The Day Company have therefore determined to put up a smelting furnace, at a point about six miles from their mine, where they have ample water for the purpose, wood being also in good supply in the neighborhood. This mine has been quite extensively opened up by means of tunneling, winzes, stopes, drifts, etc., some 1,200 tons of ore having been extracted, and much more developed in the mine. The bullion product to date exceeds \$50,000, and would have been much larger but for certain troubles between the management and the shareholders, causing for a time a suspension of active operations. The causes of this misunderstanding having been removed, the company, once more acting in accord, have determined to renew operations on their mine, which will henceforth be prosecuted on a more extensive plan than before. In the election of Mr. John B. McGee as Superintendent of their mine, the Directors have consulted the best interests of the shareholders—this gentleman being noted alike for discretion and energy, having already engineered several mining enterprises in Eastern and Central Nevada to a great success. The path of this company being now cleared of obstructions, is pretty sure to lead to an unwonted but well-deserved prosperity.

DAYTON GOLD AND SILVER MINING COMPANY.

DEVIL'S OATE, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; John Van DeWater, superintendent; A. K. P. Harmon, W. S. Hobart, Martin White, B. Peart, C. T. Bridge, trustees. Annual meeting, last Thursday in July. No. of shares, 100,000. No. of feet, 1,600. Shares per foot, 62 $\frac{1}{2}$. No. of assessments, 10. Amount, 25c. per share. Levied, April 2, 1878. Total assessments, \$734,205. Bullion yield, \$241,530. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Dayton may be regarded as a representative mine. It was located and worked by individuals as far back as 1860, and yielded, from on and near the surface, large quantities of pay ore. The present incorporation was formed in 1872. At first a tunnel was put in from the north, which cut the ledge 500 feet from the entrance. It carried quartz in seams and ore in bunches. The present shaft was subsequently commenced. A drift has been run on the 300-ft. level to near the south end of the claim, laying the vein bare ready for crosscutting. It was from this part of the mine that the ore was originally taken. The Dayton has one of the broadest and strongest ledges on the Comstock.

DE FREES MILL AND MINING COMPANY.

TESCARORA DISTRICT.

Office, Room 12, 310 Pine Street. George L. Bradley, president; Thomas E. Atkinson, secretary; J. B. Dayton, superintendent; G. W. Grayson, M. Mayblum, George L. Bradley, Archie Borland, Thomas E. Atkinson, trustees. Annual meeting, October 20. No. of shares, 100,000. No. of feet, 1,500 by 600. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 7. Amount, 10c. per share. Levied, August 5, 1878. Total assessments, \$125,000. Listed on San Francisco Stock and Exchange Board.

DE HARO MINING COMPANY.

VIROINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. L. Weaver, E. E. Smith, trustees. Annual meeting, second Wednesday in August. No. of shares, 100,000. No. of feet, 710. No. of assessments, 1. Amount, 15 cents. Levied, October 6, 1877. Total assessment, \$15,000.

DEER CREEK GRAVEL MINING COMPANY.

NEVADA, NEVADA COUNTY, CALIFORNIA.

Office, Room 1, 240 Montgomery Street. George K. Phillips, president; A. W. Robinson, secretary; B. C. Waite, superintendent; George K. Phillips, Arthur Ilagedoru, B. C. Waite, George W. Cranston, A. W. Robinson, trustees. Annual meeting, October 9. No. of shares, 50,000.

DELEVAN GOLD AND SILVER MINING COMPANY.

DEVIL'S OATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, James Delevan, Thad. S. Fitch, trustees. Annual meeting, second Monday in August. No. of shares, 100,000. No. of feet, 750. Shares per foot, 133 $\frac{1}{3}$.

The Delevan is the third, counting from the south, of the claims located on what has been the Vivian and San Fernando lode, lying to the southeast of the Florida. The claim embraces a double vein or metal-bearing ledge, one being 300 feet wide, the other 200, when they crop to the surface below, and where cut through by an old tunnel. Both ledges assay well, and although unlike in all save the ores they bear, will doubtless be found to unite. A three-compartment working shaft is being sunk to develop the claim. At the depth of 60 feet float rock was found which assayed remarkably high. At this shaft are a good house, blacksmith shop, etc. It is the intention to sink 200 feet, then drift to and crosscut both ledges.

DERBY MINING COMPANY.

LYON COUNTY, NEVADA.

Office, Room 8 Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; N. C. Hall, superintendent; A. K. P. Harmon, John Skac, C. Derby, Louis Sloss, A. J. Simmons, trustees. Annual meeting, last Thursday in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 1. Amount, 10c. per share. Levied, February 26, 1876. Total assessment, \$10,000.

DIANA GOLD AND SILVER MINING COMPANY.

TESCARORA, ELKO COUNTY, NEVADA.

Office, Room 13 and 14, 318 Pine Street. F. M. Smith, president; J. T. McGeoghegan, secretary; J. C. Lennon, superintendent; F. M. Smith, J. W. Hlassey, L. W. Crane, G. H. Willard, J. M. Haskell, trustees. Annual meeting, first Monday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 2. Amount, 5c. per share. Levied, April 25, 1878. Total assessments, \$10,000.

EAGLE COPPER AND SILVER MINING COMPANY.

CALAVERAS COUNTY, CALIFORNIA.

Office, 112 Leidesdorff Street. Jacob Moore, president; F. W. Utter, secretary; J. L. Murphy, superintendent; Jacob Moore, William Utter, S. M. Parsons, H. N. Wynman, F. W. Utter, trustees. Annual meeting, first Monday in January. No. of shares, 100,000. No. of feet, 1,500 by 600.

EAGLE SILVER MINING AND MILLING COMPANY.

LEWIS MINING DISTRICT, LANDER COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. George Grayson, president; R. H. Brown, secretary; Thomas R. Dean, superintendent; George Grayson, William M. Stewart, George O. Butler, William Dunphy, J. M. Byrne, trustees. Annual meeting, first Monday in July. No. of shares, 60,000. No. of assessments, 9. Amount, 15c. per share. Levied, July 19th, 1878. Total assessments, \$161,822.55. Bullion yield, \$23,577.33.

EAST GRAND PRIZE MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, 310 Pine Street. R. H. Minister, president; J. W. Pew, secretary; S. G. Weston, superintendent; R. H. Minister, E. E. Dorsy, E. G. DeCrano, N. J. Hussey, M. J. McDonald, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

This mine is a continuation of the Grand Prize ledge, there being only 600 feet intervening, owned by the Argenta Company. Owing to the recent strike made in the Argenta the value of this property has been greatly enhanced. A shaft has been sunk to the ledge, and low grade ore found. Work is to be resumed at once, and the property developed as soon as possible.

EAST UNION MINE.

PIONEER, ARIZONA.

Office, 320 California Street. J. R. Robeson, W. C. O'Boyle, A. W. Blair, trustees. This mine is not incorporated, and is being worked by the owners.

This claim is situated on the same lode with the Union West, being to the east of the latter. It is an early location, having been taken up only a few days after the Silver King. It is being actively worked, a shaft now sixty feet deep being put down on it near the line of the Union West. This shaft is in a well-defined lode of ore and quartz. Rich ore has been found in the croppings further up the hill, leaving no doubt but a body of equally good ore will be opened up at the point where sinking is going on. The lode outcrops in considerable strength for 1,400 feet at a point about half a mile northwest of the Silver King Mine, this being the course of the ledge.

ECHO GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 30, 302 Montgomery Street. Andrew Wasson, president; T. C. Winchell, secretary; Peter Brown, superintendent; Andrew Wasson, T. W. Lathrop, Alfred S. Baker, J. K. McPherson, T. C. Winchell, trustees. Annual meeting, fourth Tuesday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 6¢.

The Echo Gold and Silver Mining Company own that fine mining property which has been long and favorably known as the "Edinburgh claim," and which is located upon what is known as the South Comstock Lode, Silver City, Lyon County, Nevada, and adjoining the Amazon and Glasgow mines. The location extends 1,500 feet along the ledge, which is well defined, and, as far as developed, the prospect is as good as any on the Comstock. A two-compartment shaft has been sunk and timbered to a depth of 125 feet, and arrangements are being perfected for putting up hoisting works at the earliest possible moment, and continuing the shaft on down in search of the "Big Bonanza" which lies hidden beneath, as it is the universal rule in this vicinity that all ledges bearing gold near the surface carry rich silver ore below.

This claim was originally located in 1863, and prospected as a gold mine with fair success; and, in 1875, the present location was made, and work resumed for the purpose stated above.

The following is the opinion of Col. W. T. Robinson, one of the most practical engineers on the Comstock, and a thoroughly competent expert, given in a brief report recently, "as to that portion of the Comstock mineral belt lying south and west of Gold Cañon, and embracing the Overman, Caledonia, Justice, Lexington, Hartford, South St. Louis, Comet, Atlantic Con., South End, Coupou, Silver Hill, Echo, and the Amazon and Glasgow mines." Col. Robinson says: "All of the above-named properties are located upon and within the mineral zone or belt through which passes the great Comstock Lode. It is possible for any one of the above-named properties to contain a bonanza equal in extent and richness to those of the Con. Virginia and California; and it is a certainty that within the territory embraced in these locations, when developed to the extent of the Virginia City mines, as great or greater results will be the consequence. When, in after years, these very claims will have paid millions in dividends, present incredulous sellers of these shares will regret a chance lost to them forever."

ECLIPSE AND LEE GOLD MINING COMPANY.

WHITE RIVER, TULARE COUNTY, CALIFORNIA.

Office, 80 Nevada Block. J. J. Newsom, president; Daniel Buck, secretary; J. J. Newsom, G. P. Cornell, W. O. Gould, G. A. Hill, H. Lacy, trustees. Annual meeting, third Wednesday in May. No. of shares, 30,000. No. of feet, 12,600.

EL DORADO SOUTH MINING COMPANY.

PHILADELPHIA.

Office, Room 20, 331 Montgomery Street. John S. Gray, president; C. A. Sankey, secretary; John P. Couster, superintendent; John S. Gray, S. Roberts, Geo. R. Williams, John A. Paxton, S. Fallman, M. J. McDonald, A. H. Rutherford, trustees. Annual meeting, first Monday in July. No. of shares, 40,000. No. of assessments, 12. Amount, 50¢. Levied, April 27, '73. Total assessments, \$437,000. Listed on San Francisco Stock and Exchange Board.

This claim is located in Belmont, Nye County, Nevada, joining the El Dorado North, about 2½ miles from the town of Belmont. The company have various and extensive works, shafts, and cuts, leads and drifts, but depth and character not known. These have developed a large body of ore, of a very good grade. The company have good hoisting works, and a 20-stamp

mill, and can mine and mill ore for \$20 per ton. Upwards of \$390,000 have already been taken from the mine, on which exploration will be continued. The company are expending about \$50,000 per annum in the development of their claim.

The new perpendicular shaft sunk, with first-class pumping and hoisting works, now gives a depth of 1,000 feet on the level below the old incline works, prospecting now being carried on vigorously with every probability of opening up very soon a remunerative property.

EL DORADO WATER AND DEEP GRAVEL MINING COMPANY.

PLACERVILLE, EL DORADO COUNTY.

Office, 524 Sacramento Street. John W. Coleman, president; Thomas Price, secretary; G. W. Swan, superintendent; John W. Coleman. Col. J. D. Fry, H. D. Bacon, Wm. Morris, L. A. Garnett, Thomas Price, A. Hemme, trustees. No. of shares, 50,000. No. of assessments, 18. Amount per share of last, \$2. Levied, August 15, 1878. Total assessments, \$1,100,000.

ELECTRIC MINING COMPANY.

LINCOLN.

Office, 323 Montgomery Street. J. W. Wesson, president; T. B. Wingard, secretary; C. H. Rollins, superintendent; J. W. Wesson, Almarin B. Paul, J. S. Adams, J. P. Moore, William N. Wade, L. Dal, trustees. Annual meeting, third Thursday in March. No. of shares, 50,000. No. of feet, 10,000. No. of assessment, 19.

ELLEN GOWEN MINING COMPANY.

CASTE DOME, YUMA COUNTY, ARIZONA.

Office, 80 Nevada Block. H. H. Pearson, president; Daniel Buck, secretary; Wm. P. Miller, superintendent; H. H. Pearson, E. S. Denison, Clark W. Crocker, J. McMiner, W. P. Miller, trustees. Annual meeting, last Friday in February. No. of shares, 100,000. No. of feet, 9,000x600.

EMIGRANT SILVER MINING COMPANY.

LEE DISTRICT, INYO COUNTY, CALIFORNIA.

Office, 81 Nevada Block. G. T. Lawton, president; B. W. Mudge, secretary; Peter Taylor, superintendent; G. T. Lawton, A. W. Bowman, I. H. Purkitt, I. L. Hobart, H. C. Swain, trustees. Annual meeting, fourth Tuesday in July. No. of shares, 50,000. No. of assessments, 2. Amount, 50 cents. Levied, November, 1876, and May 28, 1878. Bullion yield, \$90,000. Listed on Pacific Stock Exchange and California Stock Exchange Board.

EMMET CONSOLIDATED MINING COMPANY.

EUREKA DISTRICT, EUREKA COUNTY, NEVADA.

Office, 401 California Street. Wm. P. Dewey, president; D. A. Jennings, secretary; Wm. P. Dewey, Eugene E. Dewey, John A. Paxton, Geo. F. Bragg, G. T. Lawton, trustees. Annual meeting, third Tuesday in December. No. of shares, 60,000. No. of feet, 2,800.

ENDOWMENT MINING COMPANY.

MARIETTA, ESMERALDA COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. Thomas Cole, president; R. H. Brown, secretary; Dr. R. Webber, superintendent; Thomas Cole, G. W. Grayson, J. L. Browne, M. Herman, M. Lambeth, trustees. Annual meeting, first Monday in May. No. of shares, 100,000. No. of assessments, 1. Amount, 50c. per share. Levied, August 23d, 1878. Total assessments, \$50,000. Bullion yield, \$88,764.87. Listed on San Francisco Stock and Exchange Board.

This property is located about three and one half miles northerly from the town of Marietta, in Esmeralda County, Nevada. The lode strikes northwest and southeast, with a dip to the southwest, and is in a good position for development, which was begun by a tunnel on the line of the vein. The character of the vein matter is decomposed, and on the surface was free milling, realizing about twenty per cent. of carbonate of lead, some galena, sulphurets, and oxides of iron. The width of vein matter is from five to seventy-five feet, the pay ore being from one to five feet. The value of the ore ranges from \$50 to \$125 per ton in silver. Owing to the character of the ore changing from carbonate of lead to sulphurets, a change of treatment was decided upon, and White's roasting furnaces were added to the machinery. It is expected that twenty-five tons per day will soon be reduced. The tunnel is in about five hundred feet, an air-shaft connecting two hundred feet from the surface. Here a winze is sunk two hundred feet deeper, making in all four hundred feet in depth. Another winze is sunk one hundred and thirty-five feet deep at a point fifty feet from the mouth of the tunnel and between the two winzes (the distance being three hundred feet) there is a continuous connecting drift or level over four hundred feet in length, at a depth of ninety feet below the tunnel. On the third or lower level (counting the tunnel as one) there is a drift opened south of the main winze, to a length of two hundred and fifty feet, north twenty-five feet. Connection will soon be made between the two winzes on the lower level. The two lower levels are ninety feet each in height, exposing a large amount of ore. The ground generally is not extremely hard, though blasting is required, and more or less timbering throughout. As yet, no water has been encountered, though the dampness is increasing. Water has to be hauled to supply the engine; otherwise, the facilities for developing the mines at Marietta are favorable, wood being only \$7.50 per cord, delivered.

ERIE CONSOLIDATED MINING COMPANY.

DEVIL'S OATE, LYON COUNTY, NEVADA.

Office, 240 Montgomery Street. H. B. Congdon, president; J. L. Fields, secretary; H. B. Congdon, F. B. Rogers, Silas Selleck, R. Chenery, Clinton Gurtee, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of feet, 3,400. No. of assessment, 1. Amount, \$10,000. Levied, November 20th, 1876. Total assessments, \$10,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock and Exchange Board.

ESSEX.

PIONEER, ARIZONA.

Office, 320 California Street. A. W. Blair, president; William H. Boothe, secretary; A. W. Blair, William H. Boothe, W. H. Stanley, George W. Hopkins, D. J. Edgars, trustees. Annual meeting, second Tuesday in January. No. of shares, 100,000. No. of feet, 1,500.

This claim adjoins the Silver King on the northwest, in which direction it extends for a distance of fifteen hundred feet. It lies between the Bilk and the Hercules, and is clearly on the same rich mineral belt with the Silver King. At a point three hundred feet from the line of the latter, the company have commenced sinking a shaft in a well-defined ledge of quartz and spar about six feet in thickness. There are good indications of ore all through the vein matter, but as yet it is of low grade. The shaft, which is now down twenty feet, will be carried steadily forward, in the expectation of reaching and opening up the regular Silver King lode. This is considered by the owners a valuable piece of ground, both on account of its position and good mineral indications.

EUROPA MINING COMPANY.

OLD HILL, STOREY COUNTY, NEVADA.

Office, 240 Montgomery Street. B. F. Jellison, president; J. L. Fields, secretary; B. F. Jellison, Richard Chenery, W. S. Chapman, W. H. H. Hort, Frederick Blight, trustees. Annual meeting, second Thursday in August. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 7. Amount, 6c. per share. Levied, Sept. 20, 1873. Total assessments, \$114,380.50. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

EXCELSIOR DEEP GRAVEL MINING COMPANY.

FOREST HILL, CALIFORNIA.

Office, 327 Pine Street. S. B. Wattson, president; D. F. Verdenal, secretary; John Borland, superintendent; S. B. Wattson, John Borland, A. Borland, E. Chielovich, Charles Harley, trustees. No. of shares, 50,000. No. of assessment, 2. Amount 50c. per share. Total assessments, \$50,000.

EXCELSIOR MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 9, San Francisco Stock Exchange. F. Tagliabue, president; Victor Fernbach, secretary; Thos. Buckley, superintendent; J. M. Wilde, V. Fernbach, F. Tagliabue, D. F. Verdenal, George Storey, trustees. Annual meeting, first Tuesday in September. No. of feet, 1,500.

This mine is located north of and adjoining the Richer Mine, and is on the west side of Sngar Loaf Mountain. The name of the location was the Goldfish, and three shafts have been sunk on the mine; the first about 150 feet north of the Richer shaft, and is 40 feet deep. Water making its appearance in this shaft, the second one was started 50 feet north of No. 1. Water again coming in at 35 feet, another shaft was started 35 feet farther north, and a little east of the others. In the last shaft the vein-matter was struck at 45 feet, which assayed \$59 per ton gold. A hoisting works and pumping machinery will be immediately placed on the mine, which bids fair to be one of the best in the district.

EXCHEQUER MINING COMPANY.

OLD HILL, STOREY COUNTY, NEVADA.

Office, 418 California Street. S. Heydenfeldt, president; Geo. Schultz, vice-president; Jos. Gruss, secretary; E. A. Schultz, superintendent; H. Von Barga, W. A. Schultz, Geo. Schultz, Wm. Westhoff, S. Heydenfeldt, trustees. Annual meeting, third Tuesday in October. No. of shares, 100,000. No. of feet, 400. Shares per foot, 250. No. of assessment, 12. Amount, \$1 per share. Levied January 17, 1878. Total assessments, \$380,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock and Exchange Board.

The Exchequer lies next south of the Bullion and between it and the Alpha. It has been prospected through the Bullion and Imperial shafts. The developments which have been made in the drift north, on the 200-foot level of the Imperial, together with the prospects of the Combination drift from the same level, to develop the Alpha, Exchequer and Bullion, have called increased attention to the Exchequer of late, and greatly appreciated its value. On the 1,700, 1,800, and 2,000-foot levels crosscuts have been run and thorough prospecting done, but so far nothing of value has been discovered. The vein is in existence on all of these levels, but the ore is of a low grade, and will not pay to take out. It is believed from present indications that at a lower depth it will prove better.

FALCON MINING COMPANY.

ROCK CREEK, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. Jno. A. Paxton, president; R. H. Brown, secretary; H. W. Brown, superintendent; Jno. A. Paxton, S. Reinhart, G. W. Grayson, M. P. Freeman, S. McMaster, trustees. Annual meeting, second Saturday in October. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 3. Amount, 10c. per share. Levied, April 30th, 1878. Total assessments, \$40,000. Listed on San Francisco Stock and Exchange Board.

FLORENCE BLUE GRAVEL MINING COMPANY.

PIMA, ARIZONA TERRITORY.

Office, Room 32, Merchants' Exchange. T. B. Valentine, president; F. A. McGee, secretary; A. J. Miner, superintendent; T. B. Valentine, Jas. S. Porteous, F. R. Webster, W. Leviston, D. W. F. Bisbee, trustees. Annual meeting, first Wednesday in December. No. of shares, 60,000. No. of assessment, 1. Amount, 5c. Levied, July 17, 1878. Total assessment, \$3,000.

This company was incorporated November 28th, 1877, under the laws of California, to mine for gold in Nevada County, California. The property upon which the company is now operating is situated at Hunt's Hill, about 6½ miles from Dutch Flat, in Nevada County, Cal. An extensive deposit of blue gravel, lying in the bed of a dead river, has been exposed, rich in gold. Complete hydraulic works are now in place, and flumes and ditches constructed. A large reservoir has been built, of a capacity of 12,000,000 gallons, connected by flume and ditch with the South Yuba Canal Company, from which they get their supply of water. The claim is most eligibly situated for work and washing the gravel, with a fall of over 80 feet for tailings. No drifting or tunneling will be required. The body of gravel upon its face is about 175 feet deep. All preliminary work is now completed, and all that is now wanted is a regular supply of water to make this claim highly remunerative. A supply of water is expected for at least seven months in the year. There is now a pressure of 300 feet, and can be increased to 500 or 600 feet with small outlay.

FLOWERY MINING COMPANY.

FLOWERY, STOREY COUNTY, NEVADA.

Office, Room 47, Nevada Block. Joseph Clark, president; W. W. Stetson, secretary; J. G. Rule, superintendent; Jos. Clark, Chas. H. Fish, R. N. Graves, John Skae, A. K. P. Harmon, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,100.

The Flowery Mine is located in the mining district that bears its name, and is situated to the northeast of the Sierra Nevada Mine. Originally this location comprised 2,100 feet, but recently 1,000 feet were segregated, and are now designated as the North Bonanza Mine. This property is near the northernmost extremity of the Comstock, and is situated in one of the most favored spots in the vicinity. Work has begun towards development, and will be prosecuted vigorously. Great expectations are entertained both of this mine and the North Bonanza. The title to this entire claim, including the North Bonanza, is secured by U. S. patent.

FOURTH OF JULY GOLD AND SILVER MINING COMPANY.

EUREKA MINING DISTRICT, EUREKA, NEVADA.

Office, Room 15, 310 Pine Street. D. L. McDonald, president; J. W. Pew, secretary; W. T. Davis, superintendent; D. L. McDonald, C. Trand, C. B. Gould, M. C. Gardner, W. T. Davis, trustees. Annual meeting, third Monday in April. No. of shares, 100,000. No. of feet, (about) 1,600. Shares per foot, (about) 62. No. of assessment, 2. Amount, 10c. per share. Levied, Sep. 23, 1878. Total assessment, \$20,000.

This mine lies on Prospect Hill, and is on the same mineral belt with the Eureka Con. and Richmond, from which it is distant about three miles to the northeast, the ore in all these mines being of a similar character. An incline has been sunk on this claim to a depth of 700 feet. Connecting with this incline is a vertical shaft, which intersects it at a depth of 600 feet. A tunnel has also been run in 1,200 feet on the ledge. The incline is in the ledge, which carries ore all the way, and which, though of rather low grade, has sufficed to defray more than one-half the working expenses of the mine. The property has been leased to other parties the past year; but the company will shortly resume the work of opening it up themselves, as it is believed that the ore recently struck in the incline, and which assays at the rate of \$100 per ton, will go far towards covering current expenses in the future. Work was commenced on this claim July 4th, 1870, and has been prosecuted pretty steadily since.

FOUR-TWENTY MINING COMPANY.

VIRGINIA, NEVADA

Office, Room 3, 306 Pine Street. John Skae, president; Edward F. Stone, secretary; W. S. Wright, superintendent; John Skae, J. M. Walker, W. E. Hobart, J. H. H. Williams, Jos. Woodworth, trustees. Annual meeting, third Wednesday in December. Capital stock, \$3,000,000. No. of shares, 30,000. No. of feet, 420. Shares per foot, 71. No. of assessment, 9. Levied December 29, 1874. Total assessments, \$69,330.

The "4-20" is a very old location. Something about ten or more years ago, a shaft was started on the ground, and sunk to the depth of 500 feet, when it was intercepted by a drift north from the Bullion. The title has been in dispute, as the Bullion has tried to claim the ground. Whether the courts will sustain the "4-20" or not will soon be determined. The claim lies between the Bullion and the Chollar-Potosi.

FRANKLIN GRAVEL MINING COMPANY.

DUTCH FLAT, PLACER COUNTY, CALIFORNIA.

Office, 310 Pine Street. O. F. Giffin, president; George R. Spluney, secretary; O. F. Giffin, W. H. Graves, R. N. Graves, J. D. Fry, James Terff, trustees. Annual meeting, second Friday in April. No. of shares, 20,000. No. of assessments, 3. Amount, \$37,000. Total assessments, \$37,000. Bullion yield, \$17,755.

FRANKLIN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.]

Office, 302 Montgomery Street. C. Jones, president; W. H. Watson, secretary; C. Jones, A. Fleischacker, G. Reis, L. B. Frankel, W. H. Watson, trustees. Annual meeting, last Monday in March. No. of shares, 30,000. No. of feet, 1,200. Shares per foot, 25.

FRESNO GOLD MINING COMPANY.

PINE GOLD GULCH, FRESNO COUNTY, CALIFORNIA.

Office, 80 Nevada Block. W. R. DeFrees, president; Daniel Buck, secretary; W. R. DeFrees, D. M. Seaton, C. W. Tozer, George T. Terry, Daniel Buck, trustees. Annual meeting, first Wednesday in July. No. of shares, 100,000. No. of feet, 10,500.

GENERAL LEE SILVER MINING COMPANY.

GLOBE DISTRICT.

Office, Room 12, 310 Pine Street. Wm. S. Wells, president; T. E. Atkinson, secretary; W. B. Scott, superintendent; Wm. S. Wells, D. N. Hastings, A. Chabot, C. Reis, W. Dutton, J. A. Lytle, W. F. Peabody, trustees. Annual meeting, October 19. No. of shares, 100,000. No. of feet, 1,500x600. Shares per foot, 66¢. No. of assessments, 2. Amount, 5c. Levied, March 7, 1878. Total assessments, \$10,000.

GENESSEE MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA

Office, Room 3, 308 Pine Street. L. Reynolds, president; Edward F. Stone, secretary; L. Reynolds, H. H. Flagg, L. Aldrich, C. R. Land, John Gillig, trustees. Annual meeting, first Friday in August. No. of shares, 100,000. No. of feet, 666.

The Genessee lies west and adjoining the Kossuth, and east of the Glasgow. There has been just enough prospecting done to hold the claim, and prepare for future developments. There are surface indications of a very promising character, and the locality is one which is attracting very general attention, through the wonderful developments there made.

GEORGE DOUGLASS MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, second Thursday in August. No. of shares, 100,000. No. of feet, 615. No. of assessment, 2. Amount, 25c. per share. Levied, March 5, 1878. Total assessments, \$35,000.

GEORGIA SILVER MINING COMPANY.

AMERICAN FLAT, STOREY COUNTY, NEVADA.

Office, 414 California Street. George W. Beaver, president; R. Wegener, secretary; George W. Beaver, W. Turnbull, J. T. Bradley, J. P. Dyer, Geo. W. Burns, trustees. Annual meeting, third Tuesday in December. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, 33¢. No. of assessment, 1. Amount, 10c. Levied, July 29, 1875. Total assessment, \$10,000. No. of dividends, 1. Amount, 3c. Declared, April 16, 1878. Total dividend, \$3,000. Listed on San Francisco Stock and Exchange Board.

GERMANIA MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 3, 306 Pine Street. C. W. Kendall, president; Edward F. Stone, secretary; C. W. Kendall, J. H. H. Williams, R. H. Sinton, H. C. Bidwell, E. F. Stone, trustees. Annual meeting, second Wednesday in February. Capital stock, \$10,000,000. No. of shares, 100,000. No. of feet, 600. Shares per foot, 166¢.

The Germania adjoins the Georgia, and lies south of the Rock Island. The ledge is one of the most plainly marked of the section, and the underground developments of the Rock Island prove it to be one of the broadest and most promising. Only sufficient prospecting has been done on the Germania to hold the ground.

GILA SILVER MINING COMPANY.

REVELLE, NYE COUNTY, NEVADA.

Office, Room 7, Safe Deposit Building. Vincent Neal, president; William W. Parrish, secretary; J. C. Ogden, superintendent; Camilo Martin, Vincent Neale, Theodore H. Hittell, A. K. Hawkins, R. Cohen, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of assessment, 2. Amount, 25c. per share. Levied, Aug. 27, 1878. Total assessments, \$25,000. No. of dividends, 2. Amount, \$50,000. Declared, July 8 and August 6, 1875. Total dividends, \$50,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The claim of this company, situated as above, embracing several locations, aggregating 100,000 feet, has been but partly prospected, but that little has brought to light large bodies of good milling ore, which return average assays of \$100. Assays have been made as high as \$1,000. The mine is in a highly prosperous condition, the stopes looking well and turning out a better grade and larger quantities of ore than ever before. The company own a ten-stamp mill, which, after running for a time on custom rock, has lately been crushing their own ore, on which it will be exclusively employed in the future. There has been accumulated at the mill 400 tons of ore, with a large quantity also on the mine dumps, the prospect being that the mine will yield enough to keep the mill hereafter steadily running. The Gila is now making regular shipments of bullion, which will not only be kept up but, most likely, largely increased. The business conduct of the property is good, and its future full of encouragement.

GLASGOW GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. George B. Congdon, president; John Crockett, secretary; D. H. Jackson, superintendent; Geo. B. Congdon, Sam. Miller, J. P. Page, H. S. Tibbey, G. W. Osborn, trustees. Annual meeting, fourth Tuesday in February. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40¢. No. of assessment, 5. Amount, \$6,000. Levied, February 11, 1878. Total assessment, \$45,000. Listed on San Francisco Stock and Exchange Board.

The Glasgow extends from the Amazon east toward the Kossuth, and is being prospected conjointly with the Amazon, and through the same shaft. The crosscut which was run on the 300-ft. level found the ledge considerably wider in the Glasgow than in the Amazon, and the prospects for pay ore are much enhanced thereby. A more full description of the Glasgow Lode will be found in our article on the Amazon Con. Within the past month, a body of exceedingly rich ore has been cut into on the small claim adjoining the Glasgow on the north-west, and so near the line of the two companies, that it will, without doubt, be found upon more thorough exploration to extend into the Glasgow ground.

GOLD DEPOSIT MINING COMPANY.

KELSEY, RL DORADO COUNTY, CALIFORNIA.

Office, Room 4, 309 California Street. R. Stevenson, president; J. M. Buffington, secretary; N. D. Burlingham, superintendent; R. Stevenson, H. A. Sweet, F. W. Voll, C. E. McNear, Henry Anderson, trustees. Annual meeting, last Monday in March. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 6 $\frac{1}{2}$.

GOLD MOUNTAIN MINING COMPANY.

LOWER RANCHERIA, AMADOR COUNTY, CALIFORNIA.

Office, 410 Pine Street. Maurics Dore, president; Charles Dore, secretary; J. L. Goodman, superintendent; Charles Dore, M. Dore, J. L. Goodman, T. B. Kent, W. H. Chickering, trustees. No. of shares, 24,000. No. of assessments, 6. Amount, \$1. Levied, June 22, 1878. Total assessments, \$40,000.

GOLD STRIPE MINING COMPANY.

PLUMAS COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. E. Green, president; George Standart, superintendent; E. Green, R. E. Brewster, H. C. Bidwell, L. A. Booth, A. Halsey, trustees. Annual meeting, July 27. No. of shares, 90,000. No. of assessments, 1. Amount, \$13,500. Levied, June 20, 1878. Bullion yield, \$113,909.26.

GOLDEN CHARIOT MINING COMPANY.

FRENCH, IDAHO TERRITORY.

Office, Rooms 13 and 14, 318 Pine Street. Joseph Clark, president; J. T. McGeoghegan, secretary; R. P. DeNoon, superintendent; Joseph Clark, Samuel Rosener, John Rosenfeld, Louis Sloss, A. Borland, R. T. Carroll, E. Speier, trustees. Annual meeting, first Monday in March. No. of shares, 99,000. No. of feet, 1,820. Shares per foot, 49 5-8. No. of assessment, 22. Amount, 25c. per share. Levied, March 11th, 1878. Listed on San Francisco Stock and Exchange Board, and Pacific Stock Exchange.

This mine is located on War Eagle Mountain, about four miles from Silver City. It has been prospected through the shaft and levels every hundred feet, to the depth of 1,500, and has returned a half million to the shareholders in dividends. These explorations have also developed large bodies of ore, which have not yet been stoped out. The company have hoisting works all complete, and a 20-stamp steam mill, with all the appliances of modern invention to facilitate both mining and milling. The work of exploration and of stoping and milling ore will be continued and driven energetically ahead, the late important ore developments made in the vicinity having encouraged the management to renewed and more energetic efforts for bringing the property into active production.

GOLDEN GATE CONSOLIDATED HYDRAULIC MINING COMPANY.

RUCKER FLAT, YUBA COUNTY, CALIFORNIA.

Office, Rooms 13 and 14, 318 Pine Street. P. Campbell, president; J. T. McGeoghegan, secretary; P. Campbell, P. J. White, T. P. Riordan, trustees. Annual meeting, first Monday in October. No. of shares, 100,000. No. of assessments, 2. Amount, \$1. Levied, March 2, 1878. Total assessments, \$200,000.

GOLDEN OPHIR MINING COMPANY.

KELSEY DISTRICT, RL DORADO COUNTY

Office, 319 California Street. W. A. Jones, president; J. M. Buffington, secretary; T. G. Bilty, superintendent; W. A. Jones, A. G. Lawrence, J. E. Lewis, T. L. Taylor, James W. Whaling, trustees. Annual meeting, last Monday in February. Capital stock, \$5,000,000. No. of shares, 100,000. No. of feet, 1,500.

This mine is located in Greewood Mining District, El Dorado County, California, containing 1,400 feet by 600, and is fenced, in what is known as the North Branch of the American Cañon, one mile and a half from Greenwood, and fourteen miles from Auburn Station, on the Central Pacific Railroad. There are three lodes belonging to the location. The first is of decomposed quartz four feet thick, showing good walls. The second is fourteen feet thick, showing a high grade of sulphurets. The third is of quartz and sulphurets, four feet thick. It dips east, and from appearances the veins are converging. Ten samples from the mine assayed from \$12.55 to \$929.29. The average yield, \$207.51. Lodes one and two are in slate; No. three, in slate and porphyry. The east wall is in slate, and the west in porphyry. The mine is opened by three tunnels, commencing on the west side of the mountain and running due east.

Tunnel number one is 276 feet long and 150 feet below the croppings. Lode number one is cut at ninety-six feet from the mouth of the tunnel. A level has been run 136 feet south on the lode, showing a well defined vein.

Tunnel number two is 325 feet long and 225 feet below the croppings, cutting lodes numbers one and two. Lode number one at this point is four feet six inches thick. Lode number two is fourteen feet thick, showing a large body of sulphurets, intermixed with slate and quartz,

and is quite rich in free gold. At 150 feet from the mouth of the tunnel, lode number one is cut, and a level has been run fifty feet north, showing good ore and regular walls. At 300 feet from the mouth of the tunnel, lode number two is cut, showing a vein fourteen feet thick. At this point a shaft has been sunk thirty-five feet in sulphurets for the purpose of testing the mine, and has shown good results.

Tunnel number three is 520 feet long, cutting lode number one 400 feet below the croppings. 175 feet from the mouth of the tunnel a level has been run north fifty feet, showing a good body of ore and well defined walls. At 350 feet from the mouth of the tunnel, a level has been run on lode number two, 250 feet south and 100 feet north, showing a large body of sulphurets. An ore chute has been run from tunnel number one to tunnel number three (or lower tunnel) for the purpose of proving the lode and to facilitate the handling of the ore. Lode number three will be cut by driving the lower or main tunnel fifty feet further east. A tunnel has been run from a ravine on the south end of the location, fifty feet on the lode, showing a well defined lode, good walls and good grade of ore.

There are at present about 1,200 tons of ore in the mine, stacked and ready for treatment, which was taken out in constructing the tunnels.

The stamp mill can be run by water at all seasons of the year. The mill site is 250 feet from the mouth of the lower tunnel and twenty-five feet below that level, giving 350 feet perpendicular fall of water from the ditch.

It is the opinion of some of the best of mining experts that this mine will keep a twenty-five stamp mill employed constantly for many years. The company contemplate the immediate erection of such a mill and roasting furnace.

GOLDEN STAR MINING COMPANY.

CAVE CREEK DISTRICT, MARICOPA COUNTY, ARIZONA.

Office, Rooms 32 and 33, 313 Pine Street. J. I. Ayres, president; J. W. Morgan, secretary; W. B. Hollings, superintendent; J. I. Ayres, J. F. Place, S. Silverberg, W. B. Hellings, Geo. W. Britton, trustees. Annual meeting, first Tuesday in April. No. of shares, 100,000. No. of feet, 4,500. Shares per foot, 22 2-9.

This mine is situated 90 miles northeast of Florence and 30 east of Phoenix, in the Bradshaw range of mountains. The course of the vein, which occurs in a slate formation, is northeast and southwest, running with the stratification of the country. It crops out boldly for 1,000 feet, and pitches northwest at an angle of 30 degrees, conformably with the slope of the mountain in which it is situated. The ledge matter for a distance of 400 feet below the croppings is so exposed that for a length of 1,000 feet it literally forms the face of the mountain; and for a much greater distance down it can anywhere be reached by sinking to a depth of not more than 15 or 20 feet. Under these conditions, the ore can be mined at a mere nominal cost. This deeded portion of the ledge has an average thickness of about five feet, and contains, at the lowest calculation, 50,000 tons of ore. As a short tunnel run from the adjacent cañon would intersect the ledge at a depth of 800 feet, the cost of ore extraction and drainage must for a long time be confined to a very low figure. The ore here is a lively, auriferous quartz. The gold is so coarse and free that it shows readily to the eye, and the ore can be prospected in a very satisfactory manner by crushing in a mortar and washing with a pan or horn spoon. The mass of it assays at the rate of about \$30 per ton, carefully selected pieces running up into the thousands. It is safe to estimate that this ore will yield at least \$20 per ton under the stamps. As it can be mined and milled for \$5 per ton, there would arise a net profit of \$15 on every ton reduced, or a gross profit of \$750,000 on the ore already exposed in the mine, and which may reasonably be considered but a small percentage of the whole, as the lode occupies a true fissure and will no doubt carry its ores as far down as it will be practicable to follow them. The gold is very pure, being worth \$19 per ounce, and so free that the ore can be worked up to 90 per cent. of fire assay by simple mill process. To say that the ore can be mined and milled at so small a cost implies that the natural facilities for handling it are good, which is really the case, there being wood and water in fair supply in the immediate neighborhood. As this mine could be brought into a condition of active and profitable production with a comparatively small outlay, it offers especial inducements for the investment of capital. There is not a more promising property in the district where it is situated, and very few that would so well repay a limited expenditure of money in all Arizona.

GOLDEN TERRA MINING COMPANY.

BLACK HILLS, DEADWOOD, DAKOTA TERRITORY.

Office, 327 Pine Street. M. L. McDonald, president; D. F. Verdenal, secretary; C. D. Porter, superintendent; M. L. McDonald, J. B. Haggin, Thomas Bell, J. W. Bailey, George Hearst, trustees. No. of shares, 100,000. No. of assessment, 2. Amount, 50c. per share. Levied, Sep. 5, 1878. Total assessments, \$100,000. Listed on San Francisco Stock and Exchange Board.

This mine is located in the now famous Black Hills, Dakota, and has already produced a large amount of bullion. The company owns a twenty-stamp mill fully equipped, and within sixty days from August 1, a new sixty-stamp mill, ordered from Chicago, will be at work. This property is justly regarded as one of the most promising of the Black Hills, the width and extent of the ore body being such as to assure a steady yield of ore for years to come. With the starting up of the new mills regular dividends will be in order.

GOODSHAW MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 1, 309 California Street. Robert Sherwood, president; A. F. Main, secretary; Capt. Thomas Buckley, superintendent; Robert Sherwood, F. Tagliabue, J. W. Harker, D. F. Verdonal, J. M. Wolfe, trustees. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 1-10. Listed on San Francisco Stock and Exchange Board.

The Goodshaw is a relocation of the Montauk, said to be the oldest location in Bodie—having been taken up by Bodie himself in 1860. This is one of the few claims in this district which had an outcrop of quartz of a fine character, showing considerable silver. Assays taken from the vein near the surface have given: gold, \$175.30; silver, \$165.20. A shaft has been sunk on this ground to a depth of 153 feet, and is under contract to be put down to 200 feet, to be completed by the 5th of September, when the vein will be crosscut. The shaft has cut several small veins or feeders of very rich quartz, which seem to run together at a depth of about 200 feet. This claim lies south of and adjoining the Bodie, and is on the northerly slope of Silver Hill. At the present writing (Aug. 27th), the bottom of the shaft is all in quartz of good character, and the chances for opening up a very valuable mine here, are well assured.

GOULD & CURRY SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, 69 Nevada Block. Chas. A. Fish, president; A. K. Durbrow, secretary; F. F. Osbiston, superintendent. S. Heydenfeldt, W. S. Lyle, Geo. Congdon, Geo. R. Wells, R. H. Follis, Robert Sherwood, C. H. Fish, trustees; Annual meeting, third Monday in December. No. of shares, 108,000. No. of feet, 621. Shares per foot, 173. No. of assessments, 33. Amount, \$1. Levied, April 16, 1878. Total assessments, \$2,679,000. No. of dividends, 36. Declared, October 10, 1870. Total dividends, \$3,826,800. Bullion yield, \$15,644,220.63. Listed on San Francisco Stock and Exchange Board and California Stock and Exchange Board.

This mine is located on the most prominent and highest croppings of the Comstock Lode, between the Best & Belcher and Savage. Since the last issue of the MINING REVIEW a great deal of work has been done on this mine. The main shaft has been entirely retimbered. The incline, which starts from the 1500-foot level, has been sunk to below the 1900-foot level, at an angle of 55 degrees, to 45 feet below the 1700-foot level, which the angle changes to 45 degrees in consequence of the flattening-out of the ledge. Altogether, 2,788 feet of drifts have been run on the various levels. On the 1700-foot level, a south drift has been run 374 feet, connecting with the joint winze on the line between this mine and the Savage. This and other works have secured excellent ventilation in all the levels. A large body of fair-looking vein-matter was met with in the east crosscut No. 1, on the 1700-foot level, 197 feet east of the incline. On this crosscut a well-defined seamy clay was cut, running north 17 degrees east and pitching 64 degrees east; passing through this the ground became very soft and dangerous to work. The diamond drill, which was used at this point, tapped a heavy stream of water. The matter brought out by the drill contained quartz, but with very little silver. These are considered good indications of better things to come. A large air-compressor, the largest on the Comstock, has been put up on this mine.

At our latest advice, 21st of September, 1878, the company had stopped sinking the incline for a time, and were running crosscut No. 4, in porphyry and stringers of quartz.

The new joint shaft, in connection with the Best & Belcher, on the dividing line between this mine and that, has been commenced, and a temporary engine erected for hoisting and pumping. It is 2,000 feet east of the old, or Bonner shaft, of the Gould & Curry. When it has been sunk to the 1700-foot level the new and powerful machinery to be used thereafter will be in readiness. It is expected that the work in the new shaft will not be troubled with water till it reaches a depth of 1700 feet, as the ground is drained to that depth by the Suro Tunnel. A large amount of money has been expended by the company in removing the old pumps and pumping machinery, and replacing them with new and more powerful ones. All this and the other heavy expenses incurred in dead work and improvements, have been paid. The company are confident of striking rich ores on the 1900-foot level when the new shaft reaches that depth.

GRAND CENTRAL MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, 327 Pine Street. J. W. Gashwiler, president; D. F. Verdonal, secretary; Samuel Linkton, superintendent; J. W. Gashwiler, S. Reinhart, M. J. McDonald, James Morgan, M. P. Freeman, trustees. No. of shares, 100,000. No. of feet, 3,000. No. of assessments, 2. Amount, 3c. per share. Levied, August 29, 1877. Total assessments, \$8,000. Listed on San Francisco Stock and Exchange Board.

GRAND PRIZE MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. G. W. Grayson, president; R. H. Brown, secretary; Jno. E. Dixon, superintendent; G. W. Grayson, M. Herman, E. M. Hall, Henry Williams, M. J. McDonald, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,500. No. of assessments, 1. Amount, \$1 per share. Levied, July 9, 1878. Total assessments, \$100,000. No. of dividends, 3. Amount, \$1 per share. Paid February 12, 1878. Total dividends, \$400,000. Bullion yield, \$1,497,183.17. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

Grand Prize is located in Tuscarora District, Nevada, and lies to the eastward of the Argenta. The claim has been worked about two years, and a shaft has been sunk to the depth of nearly 500 feet, and is still sinking in chlorides and sulphurets. In a short time a level will

be opened out at the depth of 500 feet. No ore has as yet been worked, nor is it the intention to do so, until the mine is relieved of water. The prospect shaft is down a little over forty feet, and everything is encouraging.

GREAT EASTERN SILVER MINING COMPANY.

BRISTOL, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. James M. Day, president; J. W. Pew, secretary; Frank W. Teller, superintendent; J. M. Day, B. F. Sides, M. J. McDonald, E. B. Dorsey, W. E. Hale, trustees. Annual meeting, fourth Thursday in December. No. of shares, 120,000. No. of feet, 1,500. No. of assessments, 1. Amount, 5c. per share. Levied, May 8, 1878. Total assessment, \$6,000.

GREAT WESTERN QUICKSILVER MINING COMPANY.

LAKE COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. E. Green, president; Andrew Rocca, superintendent; E. Green, G. Palache, A. W. Bowman, M. P. Jones, J. Beldon, R. E. Brewster, G. T. Lawton, trustees. Annual meeting, first Tuesday in November. No. of shares, 50,000. Total assessments, \$35,500. Total dividends, \$200,000. Bullion yield, \$829,-\$21.46.

GREEN MOUNTAIN GOLD MINING COMPANY.

PLUMAS COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. R. E. Brewster, president; C. G. Rodgers, superintendent; R. E. Brewster, J. J. Boyd, H. C. Bidwell, L. A. Booth, C. J. Pilsbury, trustees. Annual meeting, September 10. No. of shares, 40,000. Bullion yield, \$106,546.98.

HALE AND NORCROSS SILVER MINING COMPANY.

VIRGINIA MINING DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 58, Nevada Block. George Congdon, president; Jao. G. Congdon, vice-president; Joel F. Lightner, secretary; Philip Deidesheimer, superintendent; George Congdon, John G. Congdon, R. H. Follis, S. Heydenfeldt, Cou. O'Connor, George Wallace, George R. Wells, trustees. Annual meeting, second Wednesday in March. No. of shares, 112,000. No. of feet, 400. Shares per foot, 280. No. of assessments, 50. Amount, \$1.00 Levied, Aug 13th, 1878. Total assessments, \$2,858,000. No. of dividends, 36. Amount, \$5 per share on 8,000 shares. Declared, April 5th, 1871. Paid, April 10th, 1871. Total dividends, \$1,508,000. Bullion yield, \$8,010,767.51. Listed on San Francisco Stock and Exchange Board.

This mine lies between the Savage on the north and the Chollar-Potosi on the south, standing squarely on the path of the Comstock as it sweeps toward Gold Hill. It belongs to the group of mines that have helped to make the Comstock famous, having had its bonanza and been a large and profitable producer of bullion in its day. Since the exhaustion of its principal ore body some years ago, the company has directed its energies to the work of deep exploration, a vertical shaft having been sunk to a depth of 1,200 feet, from which level it has been continued on an easterly incline a further distance of 1,000 feet, a winze having also been put down 80 feet below the 2,200-foot level. Drifts have been run on the various levels, in some instances the entire length of the claim; but no crosscutting has yet been made. Some of the levels have also been connected by winzes. The mine has made much water, receiving largely the flow from the Savage, and filling at one time nearly up to the 1,700-foot level. This necessitated the procurement of powerful machinery for pumping purposes, through the aid of which the water having been reduced has since kept below the 2,100-foot level, the shaft having meantime been maintained in good condition. Last year this company united with the Chollar and Savage for the purpose of sinking a large prospecting and working shaft for their joint use and benefit. This stands far to the east of their present works, and has now reached a depth of 2,400 feet. This shaft, which is more fully described elsewhere in this work, will soon afford greatly increased facilities for the more thorough exploration of the mine at great depths, where already the evidences of a near approach to a great ore body multiply and gather strength every day.

HAMBURG MINING COMPANY.

EUREKA COUNTY, NEVADA.

Office, 401 California Street. Wm. P. Dewey, president; D. A. Jennings, secretary; J. C. Powell, superintendent; Wm. P. Dewey, Geo. F. Bragg, John A. Paxton, Wm. B. Murray, S. P. Dewey, trustees. Annual meeting, second Tuesday in November. No. of shares, 100,000. No. of assessments, 5. Amount, 50c. per share. Levied, April 20, 1878. Total assessments, \$155,000. Bullion yield, \$120,579.75. Listed on San Francisco Stock and Exchange Board.

The consolidated mines of this company are situated as above stated, being located on the strong and prolific mineral belt that here strikes across the country. Within the past eight years there have been taken from the Eureka District bullion values to the amount of \$30,000,-000, the present annual yield reaching \$12,000,000; this, next to the Comstock, being the most productive mining district on the Pacific Coast. The location of the Hamburg Company covers a series of parallel veins, the tract comprising an area of fifty acres, secured by U. S. patent. These veins are all on the same ore channel with the Eureka Consolidated, Richmond, "K. K.," Phoenix and other well known mines in the district.

According to a recent report made on this property, by W. S. Keys, a most competent and reliable mining authority, these lodes lie in a highly favorable geological formation, the mineral bearing zone being broad and well defined, its lateral expansion reaching at some points six or eight hundred feet. The ore, a carbonate of lead and argentiferous galena, carrying, also, a small percentage of gold, occurs here, as elsewhere in the vicinity, in large masses, which have

been found to preserve their wealth and strength to a depth of 1,200 feet at least, this being the lowest point to which any of the mines here have yet been opened. From the workings of the Hamburg Mine, confined, as yet, to near the surface, there has been extracted over \$200,000. This ore, precisely like that from the Eureka Consolidated, and the Richmond, yields from sixteen to sixty per cent. of lead, and from \$40 to \$80 per ton in gold and silver. The company have now some 800 tons of this class ore on the mine dump, the whole of it extracted in the course of prospecting the mine, no stoping having yet been done, the ore in sight above the lowest level amounting to several thousand tons. In the progress of exploration, caves filled with rich ores have been encountered here, similar to those opened up in the Eureka and Richmond group, a geological feature of importance, as pointing to continued mineralization of the lodes where they occur.

The improvements and equipments made on this property consist of a three-compartment shaft sunk to a depth of 800 feet, steam hoisting works, having capacity to go down 1,000 feet or more, together with houses, shops, wagon roads, etc. From the shaft extensive galleries have been run off at regular intervals, all in ore of excellent quality. Adjacent to their mine the company own 300 acres of wood land, capable of furnishing fuel for a long time; also, a tract of 150 acres, near the town of Eureka, which affords water ample for every purpose, this company, as regards these two essentials, being very eligibly conditioned. In view of their large and promising ore deposits, their complete equipment, wood, water, and other natural advantages, the expert alluded to, expresses the opinion that this property possesses a prospective value equal to any other in the Eureka District. The company is, in many respects, an exceptionally good one. It is financially strong, active and well managed, the directory containing the names of some of our most discreet business men and trustworthy citizens.

HAMPDEN MINING COMPANY.

CEDAR VALLEY, MOHAVE COUNTY, ARIZONA.

Office, 80 Nevada Block. B. W. Mudge, president; Daniel Buck, secretary; William A. Fuller, superintendent. B. W. Mudge, E. M. Walker, George C. Kibbe, M. G. Cobb, Daniel Buck, trustees. Annual meeting, last Monday in March. No. of shares, 100,000. No. of feet, 1,500 by 600.

HANDLY MINING COMPANY.

DODIE, MONO COUNTY, CALIFORNIA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edwd. F. Stone, secretary; C. Gurnee, J. M. Walker, C. Reis, R. F. Bunker, R. G. Brown, trustees. No. of shares, 100,000. No. of feet, 1,500.

This mine is situated between the Goodshaw and the Bodie, adjoining the latter on the south. The claim covers an area of 1,500 feet by 100. A vertical shaft has been sunk on the vein to a depth of 70 feet, cutting it at a point about 45 feet below the surface. The vein matter and ore are of the same kind as in the Bodie, much of the ore carrying from \$300 to \$400 per ton in gold. This ranks among the earliest locations made in Bodie; and, having been in the uninterrupted possession of the present owners and their predecessors, the title complete and unquestioned. The adjuncts and immediate surroundings of the Handly invest the property with an extrinsic value apart from the rich ore deposits developed upon it. The ownership rests mainly with men of large substance, the most of them residents of San Francisco.

HARRISBURG SILVER MINING COMPANY.

HARRISBURG, WASHINGTON COUNTY, UTAH.

Office, 310 Pine Street. Louis Janin, president; J. W. Pew, secretary; G. F. Williams, superintendent; Lot Janin, P. J. Van Rensselaer, W. P. Dewey, A. F. Walcott, H. N. Chauncey, trustees. Annual meeting, second Wednesday in November. No. of shares, 60,000. No. of feet, 6,000. Listed on San Francisco Stock and Exchange Board.

The four claims of the Harrisburg Mining Company embrace 6,000 feet of the Pride of the West Lode, and are on the southern extension of the noted White Reef. Each of the claims of 1,500 feet has been prospected by an incline shaft. A considerable amount of work has been done, and three distinct veins have been cut, each of which carries ore of varying grade of richness. The southern portion of the White Reef has all the characteristics of the best known and much more developed northern portion, on which is situated the Leeds mine; a there seems to be no reason why as good and as extensive a body of ore should not be encountered as that which was found in the claim of the Leeds Company. No assessment has been levied.

HARTFORD MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 3, 306 Pine Street. Wm. H. Sharp, president; Edward F. Stone, secretary; Wm. H. Sharp, Cohen, F. Walter, Wm. H. Wallace, Thomas Price, trustees. Annual meeting, first Tuesday in June. No. of shares, 35,000. No. of feet, 1,400. Shares per foot, 25. No. of assessments, 3. Levied, June 26, 1875. Total assessments \$24,500.

The Hartford lies just west of the Silver Hill. In olden times a tunnel was run west in the hill 410 feet, and a drift sent along the ledge 300 feet. These have been recently cleared out and retimbered preparatory to being used in the further development of the mine. The ledge is broad, well defined, and filled with genuine matrix, bearing ore in bunches and streaks some of which return liberal assays.

HAZARD GRAVEL MINING COMPANY.

MICHIGAN BLUFF, PLACER COUNTY, CALIFORNIA.

Office, Rooms 13 and 14, 313 Pine Street. C. K. Breeze, president; J. T. McGeoghegan, secretary; J. H. Keown, superintendent; C. K. Breeze, R. T. Carroll, James Gannon, William Davidson, James H. Keown, trustees. Annual meeting, second Tuesday in September. No. of shares, 64,000.

HEADLIGHT MINING COMPANY.

LAKE MINING DISTRICT, MONO COUNTY, CALIFORNIA.

Office, 302 Montgomery Street. George S. Dodge, president; B. R. Zantzing, secretary; Edward Clarke, superintendent; George S. Dodge, Thomas Bell, Solomon Heydenfeldt, Wm. M. Stewart, A. W. Rose, Jr., trustees. Annual meeting, first Wednesday in September, 11 o'clock, A. M. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

The claim of this company lies on the same lode with the Mammoth Mine, elsewhere described in this book. The lode in the Lake Company's ground maintains the same large proportions exhibited in the Mammoth claim, which adjoins it on the north. A shaft has been put down here 50 feet. From its bottom a crosscut has been run showing a ledge 60 feet wide, and carrying high grade ore. A tunnel is to be started at once which will cut the ledge at a depth of 1,000 feet.

HENRIETTA GRAVEL MINING COMPANY.

BUTTE COUNTY, CALIFORNIA.

Office, 309 California Street. F. Mantell, president; F. Klostermann, secretary, Charles Zwick, F. H. Hausmann, F. T. Castelhun, F. Fisher, trustees. Annual meeting, second Friday in January. No. of shares, 100,000. No. of assessments, 3. Amount, 10c. Lovied, June 7. Total assessments, \$30,000.

HIGHBRIDGE MINING COMPANY.

PHILADELPHIA, NEVADA.

Office, 310 Pine Street. Stephen Roberts, president; J. W. Pew, secretary; N. A. Garvin, superintendent; John F. Cassill, W. S. Gage, George R. Williams, Stephen Roberts, David Goodman, trustees. Annual meeting, fourth Thursday in August. No. of shares, 100,000. No. of feet, 6,000. Shares per foot, 16 $\frac{2}{3}$. Bullion yield, \$500,000. Listed on San Francisco Stock and Exchange Board.

The Highbridge mine includes several of the earliest locations made on the Highbridge lode, one of the most regular and strongly marked ore-bearing veins yet discovered in Central Nevada. This lode was discovered in 1865, and through its fine exhibit of surface ores drew at once a large population into the district. A party of eastern capitalists having purchased a number of these claims organized, and was incorporated under the name of the Combination Company. This done they proceeded to construct the largest and most costly mill ever put up east of Virginia City, building at the same time capacious dwellings, stores, stables, shops, hoisting works, etc., the entire expenditure made for these improvements, including cost of the mines, etc., having exceeded half a million dollars. After extracting over half a million dollars from the mines, suddenly the lode became faulted, and water coming in beyond the means at hand for its removal, the company suspended operations, and for several years this grand property lay dead, and so remained until recently, with the exception of one year, during which it was leased to a party of practical miners, who enriched themselves from the proceeds of the ore left in the upper levels. During the past year the entire estate has been sold to the present company, who, having organized, set diligently to work to find the faulted lode, which, after running but 13 feet west, was encountered standing in its normal position, the upper portion having, by some powerful surface movement, been advanced that distance to the east. While the company in this recovery of the Highbridge lode have insured the future success of their enterprise, they have also illustrated the value of perseverance in this branch of mining. This experience also demonstrates the manner in which the most regular lodes are sometimes broken off while it points to the direction in which search should be made to regain them. Since the restoration of the mine the new company have prospected the lode for a distance of 500 feet, along which space it varies from two to eight feet in width, carrying rich ores, enough to run their 25-stamp mill for a year. This company are now sinking their main shaft vigorously, repaired their mill and erected a white furnace, and put their entire property into good shape for extensive operations, and will soon be making a large and profitable bullion production.

HILLSIDE MILL AND MINING COMPANY.

BRISTOL DISTRICT, NEVADA.

Office, Room 23, 330 Pine Street. J. J. Corrigan, president; M. D. Howell, secretary; Eugene Blair, superintendent; A. J. Blair, J. J. Corrigan, Archie Borland, Camillo Martin, John B. McGee, trustees. Annual meeting, third Thursday in November. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 1-10th. Bullion yield, \$23,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock and Exchange.

The mine of this company, which is situated in eastern Nevada, near the Utab line, produces large quantities of fine smelting ore, that yielded an average of \$100 per ton. The lode, now opened to a depth of 170 feet, ranges from 3 to 15 feet in thickness. The company have already put up a smelting furnace, having a capacity of 30 tons per day. On the first experimental trial of nine days, bullion to the value of \$28,000, was run out. The company are now putting up hoisting works, and expect, when they resume operations, to continue without further interruption, as they have an ore body valued at \$700,000 already in sight. On the 85-foot level a drift has been run off 80 feet, and on the 130-foot level another has been run off

60 feet, both of which are in good ore. The extent of the ore body on the lowest level has not yet been fully determined, though known to be large across. This ore smelts readily, the only addition required being a small amount of quartz. The furnace of the company is located a mile below the mine, where there is a fine spring of water, and about which the town of Bristol has sprung up. A good wagon road has been built up the cañon for taking material up to the mine and bringing ore down. The bullion turned out here assays \$455 per ton, and it is calculated that with their present facilities for smelting that about \$3,000 will be turned out per day. This mine is under a good management, is now being operated successfully, and has a bright future before it.

HOMESTAKE MINING COMPANY.

BLACK HILLS, DEADWOOD, DAKOTA TERRITORY.

Office, 327 Pine Street. Lloyd Tevis, president; D. F. Verdenal, secretary; Samuel McMasters, superintendent; Lloyd Tevis, George S. Dodge, Henry Janin, William Willis, M. L. McDonald, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 60¢. No. of assessments, 2. Amount, \$1 per share. Levied, April 8, 1878. Total assessments, \$200,000. Listed on San Francisco Stock and Exchange Board.

The Homestake was among the first Black Hill properties bought in the interest of California capitalists, having been purchased by George Hearst, in conjunction with J. W. Gashwiler and Henry Janin, early in the month of April last. The mine, which embraces a number of valuable claims, covers an area of 1,500 feet long by 450 feet wide. The many tunnel and shaft openings in every part of it give evidence that the Homestake is one great, continuous body of paying ore. The most systematic and thorough developments have been made to test the real value of the property, and the result has been the erection of an \$0-stamp mill and the preparation to work the mine by all appliances that will procure a steady yield of bullion. Other mills will soon be erected, and the day is not far distant when the operations of the Homestake company will rival the largest schemes of the Constock. The average yield of the ore per ton will not fall short of \$15. The mill capacity is fully 175 tons per day. Here, then, we have nearly a million dollars as the result of one mill for a single year. Samuel McMasters, a most capable and reliable man, has been appointed superintendent of the mine. The mill, which sits directly on the mine, has been built of the finest seasoned pine lumber, and has dimensions of 100 feet front, 120 feet deep and 55 feet from floor to floor. Every part of the construction has been conducted by expert mechanics, and the mill is a model of mill architecture. Two immense ore bins, having a capacity of 2,000 tons, have been erected, and into these the ore is dumped by the cars from a tramway running from the mine into the upper portion of the building. From these the ore passes over screens, the fine particles going into bins, and the coarse to the two Blake ore-breakers and then into the bins where it is fed to the batteries by the Hendy self-feeder. Over 100,000 feet of lumber were used in the construction of the main building.

THE MACHINERY

Consists of two boilers 54x16, having 200-horse power, accompanied by a splendidly built and finished engine 20x42. The battery consists of 80 stamps, weighing 750 pounds each; two Blake rock-breakers, 9x15 each, and the Hendy self-feeder mentioned above. The entire weight of machinery is 496,000 lbs., the freight upon which alone cost the snug sum of \$38,000. The mill cost fully \$100,000. The batteries will have a capacity of from 175 to 200 tons per 24 hours, or more than two tons of average quartz per stamp. The entire machinery was furnished by Prescott, Scott & Co., of the Union Iron Works, San Francisco.

THE HOISTING MACHINERY

Consists of two 12x24 engines of 75-horse power, which are capable of raising two tons 400 feet per minute; two reels for hoisting, supplied with a steel-wire cable which will sink to a depth of 1,000 feet. This cable is a most powerful and costly one, being two and three-fourths of an inch in diameter, weighing one pound and a quarter to the foot. Added to this is a six inch drawing and lift pump with five-foot stroke, having a capacity of 5,000 gallons per hour. The entire enterprise is one of immense proportions and one that will be a profitable investment to the nerve and money of San Francisco capitalists. Mr. Hearst has taken the lead in the Black Hills quartz reduction, and the coming years of steady Homestake bullion shipments will record the wisdom of his extensive, systematic and fearless operations. This mine and splendidly appointed structure is now in operation turning out 11 bullion at the rate of about \$90,000 per month, a production that can probably be kept up for many consecutive years and may easily be increased with additional milling facilities.

HONEYCOMB GOLD MINING COMPANY.

YUBA COUNTY, CALIFORNIA.

Office, Room 20, Safe Deposit Building, 328 Montgomery Street. Frederick Schumacher, president; Otto Metchke, secretary; John Tookin, superintendent; Frederick Schumacher, F. M. Luber, John Tookin, Otto Metchke, Charles Lunt, H. Fritzsche, trustees. Annual meeting, first Tuesday in January. No. of shares, 60,000. No. of feet, 3,000. Shares per foot, 20¢.

HORNET MINING COMPANY.

TUSCARORA, TUSCARORA COUNTY, NEVADA.

Office, 327 Pine Street. J. W. Cashwiler, president; D. F. Verdenal, secretary; D. J. Jones, superintendent; J. W. Cashwiler, S. F. Cashwiler, Geo. W. Kidd, S. Reinhart, A. Eastland, trustees. No. of shares, 100,000. No. of assessments, 3. Amount, 10 cents. Levied, January 30, 1878. Total assessments, \$300,000. Listed on San Francisco Stock and Exchange Board.

HUDSON GOLD MINING COMPANY.

ROUGH AND READY, NEVADA COUNTY, CALIFORNIA.

Office, Room 6, Safe Deposit Building. A. Snider, president; S. D. Rogers, secretary; S. T. Murchie, superintendent; A. Snider, E. G. Waite, R. B. Gentry, S. E. Olmsted, I. Strassburger, James S. Murchie, S. D. Rodgers, trustees. Annual meeting, third Monday in February. No. of shares, 50,000.

This property, which consists of a gold-bearing quartz lode, is situated 12 miles northwest from Nevada City, on what has heretofore proved to be one of the most prolific sections of the great California gold belt. The location is an early one, the claim having been originally known as the Scandinavian, and has long enjoyed the reputation of being one of the best in the district. The vein here, which is about 6 feet in width, is well defined and has every feature of permanence. It has been opened by shaft and tunnel, affording good ventilation and ample facilities for ore extraction. The mine is outfitted with first-class steam hoisting and reduction works, the latter having a crushing capacity of 15 tons per day. The mill, recently started up, gives the utmost satisfaction, and is making a large and profitable bullion production, the ore here yielding from \$35 to \$40 per ton. The gold is so free that the most of it is saved by concentration, the ore being worked up very closely by the least expensive of all methods. This company, which was incorporated in April last, is out of debt, all improvements on the mine having been paid for without nearly exhausting the working capital. As the property must very soon be earning large net profits, shares are held very firmly.

HUMBOLDT MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 13, Safe Deposit Building. R. B. Sanchez, president; W. Letts Oliver, secretary; G. H. Howard, superintendent; H. C. Hyde, W. W. Morrow, A. P. Williams, G. F. Sharp, R. B. Sanchez, trustees. No. of shares, 100,000. No. of feet, 1,500.

This mine, which adjoins the Bodie on the south, and comprises 1,500 by 100 feet, lies right in the path of the richest lodes in the district as they travel toward the south. Its position, therefore, apart from other considerations, impresses upon this property a peculiar value. A shaft has been sunk on this claim to a depth of over 100 feet. When 50 feet more shall have been added a drift will be run west to cut the Bulwer and Belvidere lodes, and at somewhat greater depths a second drift will be run in the same direction to the Burgess vein, all of which pass through the Humboldt ground. The company propose to sell enough shares at bed-rock price to defray cost of preliminary work and purchase of hoisting machinery, etc. These shares, the most of which are already disposed of, are to be obtained at the company's office. We consider them a good investment.

HUSSEY CONSOLIDATED GOLD AND SILVER MINING COMPANY.

CORNUCOPIA, NEVADA.

Office, San Francisco Stock Exchange. J. W. Hussey, president; R. H. Brown, secretary; J. M. Wilson, superintendent; J. W. Hussey, F. M. Smith, J. F. McGoghegan, J. W. Souther, John Turner, trustees. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33½. No. of assessment, 6. Amount, 25c. per share. Levied, Oct. 1, 1878. Total assessments, \$95,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The Hussey Consolidated consists of the two locations, Hussey and Geneva. The Hussey joins the Leopard on the north. The Geneva is an east and west location, joining the Panther on the west. The Hussey has good hoisting works, and a shaft 500 feet deep. Most of the bullion product has come from an east and west lode, but at the present time the third, fourth and fifth levels are being extended west to prospect through the Leopard lode, which runs north and south through the Hussey; the rich clint of ore found in the Leopard being known to enter the Hussey ground below the 230-foot level. The ledge formation is wide—between 200 and 300 feet—and the material filling the crevice, as well as the ore, closely resembles the Comstock. The country rock also is similar, being porphyry on the east and sienites on the west. The ore on the north and south lode, or "Leopard," as it is called, is a rich sulphuret, carrying some ruby and stephanite, and is very friable. In the east and west lode it is very hard, and carries chlorides to a greater depth.

IDA LIVINGSTONE MINING COMPANY.

KELSEY DISTRICT, EL DORADO COUNTY, CALIFORNIA.

Office, 517 California Street. H. M. Rosekrans, president; F. P. Latson, secretary; H. M. Rosekrans, Dr. J. Ingerson, F. Tully, Saml. Dinsmore, H. Z. Oakes, trustees. Annual meeting, February 13. No. of shares, 60,000. No. of feet, 575,000 (square feet). Shares per foot, 957. No. of assessment, 5. Levied Oct. 1, '77; Jan. 18, '78; July 2, '78; August 19, '78. Total assessments, \$6,000. Bullion yield, \$192.88.

This mine is located in Kelsey District, El Dorado County, six miles from Placerville, in a northeasterly direction. A shaft has been sunk about 100 feet, with two drifts at the 100-foot level; a ledge is found at a distance of forty feet, twenty inches wide, assaying, lowest grade, \$213 per ton; the highest grade, \$872.26. The mine promises well, and has now about forty tons of fine rock on the dump.

INDEPENDENCE MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. L. Browne, president; R. H. Brown, secretary; John McNally, superintendent; J. L. Browne, G. W. Grayson, M. Herman, George Briton, Henry Williams, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 3.

Amount, 15c. per share. Levied, February 19, 1878. Total assessments, \$55,000. No. of dividend, 3. Amount, 25c. per share. Paid, August 20, 1878. Total dividends, \$75,000. Bullion yield, \$178,651.57. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

Four prospecting shafts are being put down here, both in the vein matter. No. 1, located 90 feet from the south line, has been sunk to a depth of 103 feet. From its bottom a drift has been run south to the boundary of the claim, and another north 140 feet. In the former low grade ore has been met with, and in the latter ore that mills \$50 per ton. Shaft No. 2, 507 feet north of No. 1, is down 175 feet. At points 25 and 40 feet below the surface, crosscuts have been run east, both cutting the vein which showed considerable high grade ore. On the 90-foot level of this shaft two drifts were run off, one 126 feet north and the other 400 feet south, both cutting ore of a higher grade than any met with above. Encouraged by their excellent prospects the company determined to put down a double compartment vertical shaft, which has now reached a depth of over 200 feet. This shaft is well timbered and supplied with steam hoisting works, pumping gear, etc. At a depth of 175 feet a crosscut was started from this shaft and continued a distance of 176 feet. One hundred and three feet in an unlooked for vein was cut and a drift run along it 842 feet. Eighty-eight feet from this crosscut a drift was extended to the ledge, following along it 30 feet north where this ledge was intersected by another which carried ore of excellent promise through a drift run south on it for 60 feet. Shaft No. 3, located 543 feet north of No. 2, is down 27 feet. Shaft No. 4, standing 160 feet north of No. 3, is down 50 feet. Drifts run from this shaft south 40 and north 50 feet are both in ore, and there can be little doubt but this ore body reaches to the north boundary of the claim, the ore now in sight in the various stopes and levels being estimated at 2,000 tons. During the past year the company have worked at the Windsor and Independence mill 2,920 tons of ore that have yielded \$178,650, an average of over \$60 per ton. The cost of extracting and milling this ore has averaged about \$15 per ton. This company own one-half of the Independence mill and furnace, which, together with the hoisting works, are well constructed and in good working order. This mill and furnace cost \$31,000, and the hoisting works \$10,000. Besides ore on the dump they have over \$20,000 worth of tools, supplies, etc. on hand. The receipts of the company have amounted to \$240,313 during the year, and expenditures to the same. Their shipments of bullion have been uninterrupted and are likely to continue in the future.

INDEPENDENCE TUNNEL AND MINING COMPANY.

KEARSARGE DISTRICT, INYO COUNTY, CALIFORNIA.

Office, 403 California Street. John Neale, president; A. T. Crocker, secretary; A. Caldwell, superintendent; John Neale, Geol. B. Hibbard, J. J. Rey, F. Honer, E. D. Farnsworth, trustees. Annual meeting, first Tuesday in February. No. of shares, 100,000. No. of feet, about 3,800.

This is a California incorporation, organized to explore and work the series of parallel lodes owned by them in the Kearsarge District, Inyo County, by means of a deep lying tunnel. The property of this company, aside from improvements made, consists of the Independence Tunnel site and the parallel lodes lying near each other, and named respectively the Potosi No. 1, 2, 3, and 4. The object of this tunnel is to open up and render available by the most economical plan, the ore contained in the company's own mines, and also afford a means whereby other mines in the vicinity can be drained and worked through drifts connecting with the main adit, this being the only manner in which such mines can be worked to good advantage. The location of this tunnel is such that, when driven, it will not only develop the company's mines to a great depth, but also several other valuable lodes lying in its path; and as these latter will, without any question, be worked through it, a considerable revenue to the company must accrue from this source. The development of the mines owned by the company will, however, constitute the main object of constructing this adit, on which the work already commenced will be driven ahead vigorously and without cessation, until completed.

In its course, this tunnel will intersect the several lodes that cross its path, in the following order and at the depths and distances in from its mouth herein mentioned, viz.: Potosi lode, No. 4, 700 feet in, at a depth of 415 feet; Potosi No. 3, 1,100 feet in, at a depth of 650 feet; Potosi No. 2, 1,350 feet in, at a depth of 850 feet; Potosi No. 1, 1,650 feet in, at a depth of 1,000 feet; Boomerang, 1,775 feet in, at a depth of 1,150 feet; Rex Montis, 2,036 feet in, at a depth of 1,320 feet, and the Mountain View, 3,033 feet in, at a depth of 1,716 feet: the last three lodes mentioned belonging to the Rex Montis company. As will be seen from this showing, the facilities for tunneling are here very great, a little over 3,000 feet of adit establishing a backing of more than 1,700 feet.

The lodes of both these companies have been examined by several competent experts, all of whom pronounce them to be strong, well marked fissure veins, rich in the precious metals. Potosi No. 4, the lowest in the group of veins belonging to the Independence company, has a width of about 12 feet on the surface, No. 3 being 16, while No. 2 and No. 1 are each about 6 feet wide. These, in common with most of the veins here, have a northwesterly strike, and occur in a formation composed of sienite, porphyry and granite, corresponding with the country in the neighborhood of the Comstock Lode. This is undoubtedly a formation most favorable for deep fissured and permanent veins, the talc slate that here follows the ore belt, being another feature pointing strongly to persistence and fertility. In the development of large quantities of high grade ore in these mines, the above favorable geological indications receive further and ample

verification. On Potosi No. 4, an open cut has been made for a distance of about 100 feet, all in first-class ore. On No. 3, a drift has been run 40 feet, disclosing a stratum of good ore three feet thick. No. 2 shows a 6-foot vein, all composed of a fine quality of ore, the showing on No. 1 being also most encouraging.

The mass of workable ore from these mines will, it is calculated, mill about \$200 per ton. They carry 12 per cent gold and 88 per cent silver, and are so little contaminated by base metals, that they can be worked up to 85 per cent. of their assay value by the simplest mill process, giving bullion 900 fine. The ore is a clear, lively quartz, carrying horn silver and sulphurets of silver. The veins here all produce ore of an excellent quality from the surface, the developments made establishing that it improves with depth, both as regards bulk and purity, the results reached in the Rex Montis mine, opened to a depth of 500 feet, being quite conclusive on that point.

The Independence company has already a good deal of rich ore on their dumps, which quantity will be steadily added to in the future, the ore accumulating at the same time that the tunnel is being run. Assays of ore from these veins as well as the Rex Montis, run up into very high figures, many of the samples assayed being as rich as any ever taken from the Comstock mines. Pieces of mineral taken out here have, in fact, come so near being pure silver that they might be called metal rather than ore. Thirty-six pounds of this material has been known to produce as much as 32 pounds of silver, beside some gold. One of the original locators of these lodes, being without means, managed to support himself and defray all expenses while prospecting them, by the proceeds of the ore which he first rendered friable by roasting on a pile of wood, after which it was crushed in a hand-mortar, and the metallic portions being washed out, were melted into a bar in crucibles. Even by this crude method of reduction, fair wages could be made.

In view of the ore exhibit made here, a mill of large capacity will become with the company an early necessity. In close proximity to the mines exist good mill sites, both water and timber abounding here in unlimited quantity; water is in fact so plentiful that it can be extensively employed for the propulsion of machinery. The entire cost of mining, hauling and milling the ores will not exceed \$10 per ton.

The tunnel right secured by this company constitutes, under the circumstances, a very valuable franchise, inasmuch as the altitude of these mines, varying from 10 to 12,000 feet, precludes surface work being advantageously prosecuted during the Winter. But aided by this tunnel, which enters the mountain at an elevation of 11,000 feet, 2,000 feet below its summit, mining operations can be carried on uninterruptedly at all seasons of the year. This right was located in August, 1877, under the Congressional law giving locators of tunnel claims ownership to all blind lodes encountered throughout a distance of 3,000 feet, and extending 750 feet on each side of the tunnel, or 1,500 feet on either side, as the owners may elect. The first section of this work to be built will be five feet by seven, a size sufficient for laying down a single track. After lode No. 4 is reached, it will, however, be so enlarged as to accommodate a double track. Through the employment of Burrell drills the work will be pushed forward very rapidly as well as cheaply, the ground to be penetrated being so firm that it will stand without timbering.

The capital stock of the company is \$10,000,000, divided into 100,000 shares, of the par value of \$100 each. Their titles to these various properties is perfect, the claims having been purchased from the original locators, and the amount of work required by law having been done upon them, surveys have since been made preparatory to making application for U. S. patents to all their property.

This plan of the Independence Company for exploring the entire band of mineral bearing lodes that here traverses the northerly slope of the Kearsarge Mountains, is so manifestly the proper one to be adopted that it has met with the unqualified approval of every mining engineer who has examined the property, or had his attention called to the subject. It is, in fact, a grand and commendable enterprise, alike attractive to the mining expert, the capitalist, and others seeking a safe and promising investment.

INDIAN QUEEN MINING AND MILLING COMPANY.

ONEOTA, ESMEERALDA COUNTY, NEVADA.

Office, 69 Nevada Block. George Congdon, president; A. K. Durbrow, secretary; T. J. Hubbard, superintendent; George Congdon, A. E. Davis, Grove Adams, Edward Barron, Daniel Cook, trustees. Annual meeting, fourth Tuesday in April. No. of shares, 60,000. No. of feet, 1,000. Shares per foot, 60. No. of dividends, 2. Amount, 50 cents each. Total dividends, \$60,000. Bullion yield, \$346,863.78. Listed on San Francisco Stock and Exchange Board.

As will be seen by the above statistics, the Indian Queen is one of those mines which has become dividend-paying, without ever levying an assessment. The mine has produced \$346,863.78, of which \$60,000 has been bestowed on the stockholders, and the remainder expended for machinery, to aid in opening up and developing the mine. This is what is termed a base metal mine, its ores being an argentiferous copper, combined with zinc, lead, antimony, etc. In the process for extracting the silver, the metal is melted with the copper, and formed into bars, containing from 350 to 400 parts in the 1,000 of silver. All the other metals are lost. This base bullion, as it is called, is bought here by agents of smelters at Swansea, Wales.

The developments on the mine show an increased volume of the ore bodies.

INSURANCE MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 2, Nevada Block. R. F. Bunker, president; M. Landers, secretary; John F. Eagan, superintendent; R. F. Bunker, R. G. Brown, John Landers, C. P. Ferry, G. W. Brittan, trustees. Annual meeting, September 4th. No. of shares, 30,000. No. of feet, 2,000. Shares per foot, 15. No. of assessments, 2. Levied, September, 1875. Total assessments, \$105,000. Bullion yield, \$50,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Insurance adjoins the Andes on the west. It was formerly prospected through a tunnel starting below the Andes, and running 450 feet into the hill. This encountered the ledge and ore, running from \$40 to \$50. The ore body was followed by an incline a long distance, and finally abandoned. Work has recently been resumed. A working shaft has been started, and is making good progress toward the vein below. The ore, which was formerly abandoned as too poor to pay mining and milling, will now pay a large profit over both, and at the same time develop the mine and follow the prospects of something very much better further down.

JEFFERSON SILVER MINING COMPANY.

JEFFERSON, NEVADA.

Office, Room 29, 331 Montgomery Street. John L. Gray, president; C. A. Sankey, secretary; John S. Gray, A. H. Rutherford, George R. Williams, C. X. Hobbs, H. Mayers, trustees. Annual meeting, fourth Thursday in January. No. of shares, 50,000. No. of assessment, 4. Amount, 50c. per share. Levied, April 13th, 1877. Total assessments, \$95,250. No. of dividend, 2. Amount, \$25,000. Declared, May 15th, 1875. Total dividends, \$50,000. Bullion yield, \$300,000. Listed on San Francisco Stock and Exchange Board.

The claim of this company is situated in Nye County, Nevada, and joins the Prussian mine on the north. Prospecting has been carried on through a shaft 500 feet deep, and levels, each 100 feet. The croppings of the ledge are very extensive, and the vein where cut is from four to six feet wide, containing ore which assays from \$100 to \$1,000 per ton. The company have steam hoisting works and a 15-stamp mill, and with the facilities at command can mine and mill their ores at a cost of about \$17 per ton. The mine is now 700 feet deep, and having been idle for some months, the late superintendent, L. J. Hamlett, has resumed operations under a six-months' lease from the company, with cheering prospects of encountering paying bodies of ore.

JENNIE A. AND BLACK ROCK MINING COMPANY.

WHITE PINE, NEVADA.

Office, Room 6, 318 Pine Street. W. H. Duren, president; J. W. Clark, secretary; J. R. Kendall, superintendent; W. H. Duren, F. Cutting, J. R. Kendall, D. Wilder, E. B. Pond, trustees. Annual meeting, last Saturday in July. No. of shares, 100,000. No. of feet, 8,100. No. of assessment, 2. Amount, 15c. per share. Levied, November 17th, 1877. Total assessments, \$15,000.

This property consists of five mining locations on White Pine Mountain, Nevada, contiguous to each other and consolidated into one property, together with 960 acres of land, with timber and water-rights thereon. The work upon the mines has exposed a well-defined ledge of gray carbonate ore, similar in character to the smelting ores of the Eureka Mining District. As soon as the company feel justified, furnaces will be erected, and the reduction of ores energetically prosecuted.

JOE SCATES CONSOLIDATED SILVER MINING COMPANY.

VIRGINIA MINING DISTRICT, NEVADA.

Office, Room 16, 403 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, third Saturday in February. No. of shares, 100,000. No. of feet, 540. No. of assessments, 3. Amount, 25c. per share. Levied, December 13, 1877. Total assessments, \$70,000. Listed on San Francisco Stock and Exchange Board.

The Joe Scates Consolidated Silver Mining Company was incorporated November 11, 1875, on claims which were located in June, 1860, being among the earliest located in Virginia District. The original ground was 4,600 feet, which was divided in July, 1876, into seven companies, the original company retaining its old name and organization. The names are as follows: Mount Hood, Vancouver, George Douglass, Joe Scates, De Haro, Tolo and Sabine. The developments since that time, made through the Joe Scates shaft and the Suro Tunnel, prove that these mines are on one of the largest ledges of the Comstock belt, being on the east ledge, toward which all the older companies on the original Comstock are now running their east drifts, and to which they are looking for new bonanzas. The Joe Scates has hoisting works and a shaft 300 feet deep. The locations of these mines are now looked to by the mining public with increasing and absorbing interest as the virgin ground for new ore bodies. The location is immediately east of and adjoining the great bonanza-bearing mines of the old Comstock, which mines, as they are worked out, must give place, in the public opinion and interest, to the new mines on this unexplored region of the Comstock—from the fact that the future workings eastward of the old bonanza mines must necessarily bring them directly into the possession of the Joe Scates Consolidated series of mines, as given above. The value and importance of the Suro Tunnel to the developments and working of these mines cannot be too highly estimated, as is already in part proved by the tunnel having opened a ledge 60 feet wide, at a depth of 1,650 feet, in the Mount Hood ground. The entire group of seven mines can be worked by means of the north or lateral branch of the Suro Tunnel, thereby saving the expenditure by each company of probably \$1,000,000 in hoisting and pumping works, and of course obviating the necessity of that amount of assessments—an aggregate saving of at least fifteen million dollars.

JULIA CONSOLIDATED MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 5, 419 California Street. Thomas Cole, President; J. M. Livingston, vice-president; A. Noel, secretary; Frank M. Thayer, superintendent; Thomas Cole, J. M. Livingston, C. W. Kellogg, Archie Borland, Geo. W. Grayson, trustees. Annual meeting, second Wednesday in August. No. of shares, 110,000. No. of feet, 3,000. Shares per foot, 30 $\frac{1}{2}$. No. of assessments, 6. Amount, \$1.00. Levied, Sept. 6, 1878. Total assessments, \$632,500. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Julia lies directly east of the Bullion and Chollar-Potosi. When the number of mines which have taken up positions and are continually working to the east is considered, the value of eastern locations cannot be too highly prized. This is an early location, the ground having been taken up in 1860. The work of development is being urged forward here with a rapidity unexcelled on the Comstock. The mine is being opened by means of a perpendicular shaft of large dimensions, which has now reached a depth of 2,000 feet. Much prospecting has been done on the various levels. The explorations carried on in the 1,600, the 1,800 and 2,000-foot levels having been thorough and extensive, the most of the work performed during the past two years having been on the last two mentioned. The shaft cut the east country and entered ledge matter before reaching the 1,400-foot level, and has continued in the same ever since, having in its progress intersected some small veins containing good milling ore. The south drift, on the 1,600-foot level, was run entirely in a quartz formation of great promise. On the 1,800-foot level a drift has been extended south 1,400 feet, connecting with the Ward shaft. On this level 10 crosscuts have been driven through the ledge 100 feet, reaching the west wall. On the 2,000-foot level a drift has been extended south about 300 feet. From this drift two crosscuts have been carried east, both of which it is expected will, in the course of a very few days, enter the ore body known to exist at that point, it having already been bored into with the diamond drill. Latterly progress in these crosscuts has been slow, owing to the frequent breaking of the pump-rod and other mishaps, whereby much water accumulated in the lower level of the mine. This water has now been removed, the drift cleaned out and everything is working in the prime order. In drilling, the company make use of the Burleigh machine and compressor, having introduced many other improvements of recent date. If a veritable bonanza shall fail to be developed in this ground before this writing shall reach the public eye, the disappointment, even among disinterested and well informed mining men, will be general and profound.

As this mine makes a good deal of water on the 2,000-foot level, and which will be very likely to increase as greater depth is reached, the directors of the Julia Company have entered into a contract with the Sutro Tunnel Company, for the use of that adit for drainage purposes. Under this arrangement much less costly machinery will be required in the future working and exploration of the mine than would otherwise be necessary, better ventilation of its lower levels being at the same time secured.

JUSTICE MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 2, Hayward's Building, 419 California Street. J. P. Cavaller, president; R. E. Kelly, secretary; S. T. Curtis, superintendent; J. P. Cavaller, R. H. Lloyd, A. Borland, R. Sherwood, J. H. Dobinson, trustees. Annual meeting, first Monday in May. No. of shares, 105,000. No. of feet, 2,100. Shares per foot, 50. No. of assessments, 26. Amount, \$1.50. Levied, August 13, 1878. Total assessments, \$2,657,500. Bullion yield \$3,000,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Exchange Board.

The Justice mine is located on the southern portion of the Comstock Ledge, and a large amount of work has been expended in prospecting and developing the mining ground. Bullion to the value of \$3,000,000 has been obtained from the ore extracted and worked; but as the ore has been of low grade, the entire amount has been absorbed by cost of mining, milling, and labor of opening the mine—drifts having been run upwards of 1,800 feet in length on different levels. From the 300, 600, 800, 1,000, 1,150, and 1,300-ft. levels, ore has been taken, and crosscuts run on all these levels; but the ore obtained from the mine has failed to provide means requisite for necessary expenditures, and the Directors have been compelled to levy heavy assessments to cover the deficiency.

The Woodville Consolidated Silver Mining Company had a location on part of the ground owned by the Justice mine, and the Trustees, to avoid complicated and tedious litigation, purchased the controlling interest at a cost of upwards of \$500,000.

The former Directors had pursued such a course as to awaken distrust on the part of many of the large stockholders of the Justice, and in December, 1877, a complete change was made in the management; a committee was appointed to investigate the books and accounts of the company; that committee entered upon their labors and prosecuted them to a final result; their report was published and given to the stockholders in May, 1878, and suits at law commenced against the late Treasurers, Schultz & Von Borgen; late Superintendent, E. A. Schultz; and late Secretary, J. S. Kennedy, to recover amounts claimed to have been unlawfully expended. Sam. T. Curtis was appointed Superintendent in place of E. A. Schultz, and a most careful and rigid system of economy has been enforced, and the cost of milling reduced from \$11 per ton to \$9 per ton.

The mine is well provided with hoisting works, pumping machinery, etc., and the work

of sinking shaft, and opening new drifts and levels, is being vigorously prosecuted, with the confident expectation of obtaining ore of higher grade, and in sufficient quantity to place the mine, at no very distant day, among the list of dividend-paying mines.

The capital stock of the company consists of \$10,500,000, divided into 105,000 shares.

KELSEY GOLD AND SILVER MINING COMPANY.

KELSEY DISTRICT, EL DORADO COUNTY.

Office, Room 36, 330 Pine Street. H. A. Cobb, president; J. H. Sayre, secretary; B. O. Hodge, superintendent; H. A. Cobb, F. R. Wilson, C. E. Gillett, Henry De Veure, Fred MacCrillish, trustees. Annual meeting, September 29, 1878. No. of shares, 50,000. No. of feet, 5,340. Shares per foot, 9-31. No. of assessment, 17. Amount, 20c., \$10,000. Levied September 19, 1877. Total assessments, \$23,000.

KEYSTONE CONSOLIDATED MINING COMPANY.

AMADOR COUNTY, CALIFORNIA.

Office, Room 40, 310 Pine Street. J. M. McDonald, president; T. J. Shackelford, secretary; O. C. Hewitt, superintendent; J. M. McDonald, E. J. Crane, H. E. Robinson, trustees. Annual meeting, fourth Tuesday in January. No. of shares, 10,000. No. of dividend, 135. Amount, \$10,000. Declared July 10, 1878.

K. K. CONSOLIDATED MINING COMPANY.

EUREKA DISTRICT, EUREKA COUNTY, NEVADA.

Office, 40 Nevada Block, 300 Montgomery Street. A. E. Davis, president; B. B. Minor, secretary; J. A. Porter, superintendent; A. E. Davis, J. B. Haugin, J. J. Corrigan, Alex. Forbes, George Hearst, trustees. Annual meeting, first Friday in September. No. of shares, 50,000. No. of feet, 1,200. Shares per foot, 41-60. No. of assessment, 4. Amount, \$1.00. Levied, September 13, 1878. Total assessments, \$162,500. No. of dividend, 5. Amount, \$12,500. Declared (last) October 11, 1878. Total dividends, \$62,500. Bullion yield, \$1,609,311.85. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

KENTUCK MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 310 Pine Street. M. L. McDonald, president; J. W. Pew, secretary; S. L. Jones, superintendent; M. L. McDonald, C. L. McDonald, C. B. Gould, R. H. Mims, J. M. Day, trustees. Annual meeting, fourth Wednesday in November. No. of shares, 30,000. No. of feet, 95. Shares per foot, 300. No. of assessment, 13. Amount, \$1. Levied, August 7, 1878. Total assessments, \$270,000. No. of dividend, 32. Declared, March 10, 1870. Total dividends, \$1,252,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is situated in the town of Gold Hill, and constitutes a portion of the ground worked profitably with arrastras before the more northerly sections of the Comstock Lode were discovered. The surface rock here was rich in free gold, and paid largely even when worked by the above simple means, the ores at greater depths having also produced gold equal to almost anything opened elsewhere on the great Washoe lode. The Kentucky occupies a position between the Yellow Jacket and Crown Point mines, and is worked through the shaft of the latter. The active development of the mine was for a considerable time suspended, pending the result of explorations on the lower levels of the Crown Point, which were in turn delayed by the water on the lower level of that mine. Recently, however, exploratory work on the Kentucky has been resumed, the joint shaft of the Crown Point and Belcher, now sunk to a depth of 2360 feet, having effectually drained the Kentucky ground, from the lower level of which a drift is being advanced east. This drift has already reached what is known as the old east ledge, on which an uprise is being made to ascertain its extent and value. Some small ore seams, yielding fair assays, have been cut in this ledge, and the company are hopeful that it will very soon afford a quantity of good milling ore. A drift on the 800-foot level of the Crown Point has been run north to the Kentucky ground, preparatory to crosscutting at that point. In the early days two streaks of ore were worked out in this part of the Kentucky ground, and what they are now going after is a supposed body of ore lying between those that were worked. Crosscutting will be commenced as soon as the drift shall be extended two-thirds of the distance through the Kentucky ground. The drift will eventually be pushed through into the Yellow Jacket. There can be little question but the promising developments being made in Crown Point will extend into this mine also. The Kentucky will, in fact, be likely to share largely any good fortune that may be in reserve for its neighbors, either on the north or the south.

KOSSUTH MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 3, 306 Pine Street. Edward P. Flint, president; Edward F. Stone, secretary; E. P. Flint, F. Brisac, G. H. Goddard, M. Greenwood, John Yule, trustees. Annual meeting, third Monday in January. No. of shares, 108,000. No. of feet, 2,700. Shares per foot, 40. No. of assessment, 8. Amount, 15c. per share. Levied, August 31, 1877. Total assessments, \$421,200. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Kossuth adjoins the Dayton on the south. The company have a United States patent for their ground, and the title is perfect. The surface indications, independent of the ledge croppings, were such as to lead to the conclusion that a vein of ore was lying below. The soil is composed of attrite ledge matter, and contains both silver and gold. Developments have been made on the 350 and 500-foot levels. On the former level a drift has been run south 700 feet, laying bare the ore vein, ready for crosscutting. A winze from the 200 down ventilates the drift perfectly. Drifts, both north and south, on the 500-foot level, have also laid bare the

vein on that level. The ledge is well defined, containing the matrix which at all points characterized the Comstock, and is from 60 to 130 feet in width, and the west wall has never been touched. That this will be found to concentrate below, and be ore-producing, there can be little doubt. Near the surface gold predominates. On the 200-foot level the ledge carried ore in bunches, and the stringers cut by the lateral drifts on the lower levels indicate an increasing amount of mineral with increasing depth. If Dame Rumor is correct, work in the Kossuth may be commenced very soon. If certain propositions of consolidation, which are under contemplation, be carried out on the plan proposed by one of the directors, they undoubtedly would give a very good result, and be of great benefit to all parties interested.

LA GRANGE DITCH HYDRAULIC MINING COMPANY.

STANISLAUS COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. G. T. Lawton, president; Jos. Messerer, superintendent; G. T. Lawton, J. Beiden, A. W. Bowman, W. T. Babcock, O. F. Giffin, trustees. Annual meeting, first Monday in May. No. of shares, 50,000. Total assessments, \$287,500. Total dividends, \$110,000.

LADY BRYAN SILVER MINING COMPANY.

FLOWERY DISTRICT, STOREY COUNTY, NEVADA.

Office, 304 California Street. I. F. Thompson, president; Andrew Baird, secretary; John Kelly, superintendent; I. F. Thompson, T. C. Grant, W. S. Wood, C. F. Smyth, G. W. Hazleton, trustees. Listed on San Francisco Stock and Exchange Board.

This mine, after an uneven and chequered career, has passed at length, through the instrumentality of a sheriff's deed, into new and stronger hands. This transfer of ownership occurred about one year ago, since which the new owners have proceeded to outfit the property in a superior manner, supplying new and more powerful machinery where needed, and thoroughly repairing the old. The work of further exploration has, also, been prosecuted with unwonted vigor, it being the purpose of the new directory to open the mine with system, and on a scale commensurate with its obvious merit. The machinery here employed is scarcely second to any in the Washoe country. The management is first-class, the company out of debt, and great will be the disappointment in mining circles if a large and profitable ore body is not developed in this ground before the lapse of another year. There have, in fact, been opened out here already immense quantities of ore that under a prudent administration could have been made to yield a moderate profit. These ores, before neglected, or so badly handled that they failed to pay, will now, no doubt, be milled and be rendered a source of considerable revenue.

This is an early location, the Lady Bryan claim having been taken up in the Summer of 1859. It comprises 2,000 linear feet on a broad lode, or rather ore-channel, that here strikes across the country parallel with the Comstock ledge, from which it is separated by a space of about three miles. Like the great metaliferous belt further west, this channel carries large bodies of ore, some of high, some of medium, and others of low grade. In some cases, these ore bodies lie on or near the surface, and again at points far below. The belt of ledge matter varies here from 100 to 300 feet in width, its outlines being everywhere more distinctly marked than are those of its rival higher up against the face of Mount Davidson. Its surface exposure forms within the Lady Bryan limits quite a knoll, larger than any outcroppings on the Comstock except the quartz mound that constituted the original Gold Hill. Many thousand tons of this rock were quarried out and milled during the early history of the mine. As it carried a large percentage of free gold, with some silver, and could be easily reduced, it was worked, even in that day of high prices and great waste, with some accruing profit. While a good deal of work has been done, and large sums of money expended, on this mine, it has never been explored with thoroughness and system, former managers being content to open it in a hasty, make-shift sort of way. Caring only for immediate results, they went simply for the ore within easy reach. For years, nearly all work on the mine was suspended, the shares being used simply for speculative purposes. All this will now be changed, and the great twin lode of Washoe will have the benefit of ample means, applied in a judicious and business-like manner, for its further development. This mine has been equipped with a ten-stamp steam mill and steam hoisting works, the latter having capacity to carry exploration to a depth of 1,200 or 1,500 feet. The present workings, sunk to a depth of 600 feet, will now be extended laterally, and pushed downwards as fast as a strong working force, aided by the best modern appliances, can carry it. There are bonanzas in this broad ore-belt, and in due time this company will unearth them.

LADY FRANKLIN GOLD AND SILVER MINING COMPANY.

SILVER MOUNTAIN.

Office, Room A, 507 Montgomery Street. H. J. Tilden, president; F. E. Luty, secretary; H. J. Tilden, Crownson Smith, Francis Reichling, M. Shaw, J. S. Luty, trustees. Annual meeting, June 6. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50.

LADY WASHINGTON CONSOLIDATED MINING COMPANY.

GOLD HILL, NEVADA.

Office, Rooms 5 and 6, 302 Montgomery Street. R. N. Graves, president; W. H. Watson, secretary; E. D. Boyle, superintendent; R. N. Graves, John T. Hill, Archie Borland, Daniel Cook, Monroe Thomson, trustees.

Annual meeting, last Wednesday in July. No. of shares, 103,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Lady Washington lies between the New York and Justice mines. The works are located on the ridge rising east of the ravine leading from Gold Hill to Silver City; are easy of access, and have all the dump-room which will be needed. The location was made Dec. 23d, 1859, on a line of croppings which runs parallel with the cañon.

Contentions about title having arisen between the Lady Washington, Keystone, Benton, and Boyle, these several companies entered into an agreement not long since for readjusting their lines, which was effected on the following basis: The stockholders in the Lady Washington Company receive 54,000 shares of the stock of each of the new corporations of those companies, in lieu of the 60,000 shares now held by them; the stockholders of the Benton receive 54,000 shares of the Benton Consolidated; the stockholders of the Keystone receive the same number; and the shareholders of the Boyle receive 54,000 shares of the Lady Washington Consolidated—one share of stock in the Lady Washington entitling the holder to nine-tenths of a share in each of the new corporations. Under this new arrangement, the ground of the latter company is made to extend across Gold Cañon, lying, in relation to adjacent claims, in the position explained in the article on the Benton Con. mine. Since this remodeling, the company have secured their title by United States patent. With the quieting of these disturbing causes, this company have redoubled their efforts for the exploration of their ground, having hurried on the work previously commenced with the utmost vigor. There was considerable ore picked from the surface of the claim in early days, and milled with profit. The influx of water deterred the original owners, however, from making developments to any depth. This trouble recurring, the present company determined to master it at once and permanently; to which end they commenced, in 1873, sinking a main pumping and working shaft of three compartments. This shaft has been sunk to the 1,300-ft. level, and is being pushed actively downward. It is well timbered, and in every respect one of the most substantial structures of the kind on the Comstock. For relieving the mine of water, a monster pumping engine, similar in all respects to that at the C. and C. shaft, has been procured and placed in position, and 12-inch pumps introduced, at a cost of \$50,000. This arrangement has proved adequate and economical; and whether the flow be great or little, it is handled readily, the engine consuming no steam when not in action. The cost of the entire hoisting works, which are first-class throughout, has exceeded \$100,000. These works have power to sink to a depth of 3,000 feet. In the course of exploration on the mine, extensive drifts and crosscuts have been run, cutting into ore and promising vein material at many points. The company are in fact advancing with the certainty of developing here a veritable bonanza before sinking much further.

LEE MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 59, Nevada Block. H. H. Hobbs, president; W. R. Townsend, secretary; H. H. Hobbs, W. T. Duncan, A. Pray, W. C. Flint, J. W. Moyle, trustees. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 1. Amount, 5c. per share. Levied, August 10, 1876. Total assessments, \$5,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine was located in 1863. A three-compartment shaft has been sunk 110 feet deep on the northerly part of the ground. The mine adjoins the Lady Washington and Boyle ground on the north. Work will be resumed on the mine in a short time, and suitable hoisting and pumping works erected.

LEEDS MINING COMPANY.

HARRISBURG, SILVER REEF, UTAH TERRITORY.

Office, 327 Pine Street. L. L. Robinson, president; D. F. Verdenal, secretary; G. F. Williams, superintendent; L. L. Robinson, Thomas Bell, Alexander Forbes, Louis Janin, W. P. Dewey, trustees. No. of shares, 60,000. No. of feet, 3,000. No. of dividend, 5. Amount, 20c. per share. Declared, January 25, 1878. Total dividends, \$60,000. Listed on San Francisco Stock and Exchange Board.

This mine has now been in operation since October, 1876, since which time it has paid five dividends of 20 cents each, aggregating one dollar per share, or \$60,000. There have been no assessments. The mine is now producing about \$20,000 per month, less discount on silver, which has this year varied from 10 to 13 per cent. The cost of running the mill and mine is about \$13,500 per month. The company owns a ten-stamp mill. The ore at present extracted is low grade, but so easily crushed that 40 tons can be reduced easily without running the ten-stamp more than 16 hours per day. The prospect work is being pushed rapidly ahead, and should another body of average ore be struck, dividends will be resumed. Meanwhile there is no probability of an assessment.

LEOPARD MINING COMPANY.

CORNUCOPIA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. Fred. F. Coffin, president; R. H. Brown, secretary; Jno. M. Wilson, superintendent; Fred. F. Coffin, H. H. Scott, Jacob Schleicher, Wm. O. Weed, trustees. Annual meeting, last Monday in December. No. of shares, 50,000. No. of feet, 1,500. Shares per foot, 33 $\frac{1}{3}$. No. of assessment, 7. Amount, \$30 per share. Levied, June 10, 1878. Total assessments, \$150,000. No. of dividend, 6. Amount, 25c. per share. Paid December 15, 1876. Total dividends, \$102,500. Bullion yield, \$1,139,951.57. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

LEVIATHAN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room A, 507 Montgomery Street. C. W. M. Smith, president; F. E. Luty, secretary; John McMahon, superintendent; C. W. M. Smith, N. Atkinson, Henry Raymond, H. W. Massey, G. P. Theller, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50. No. of assessment, 7. Amount, three at 50c. per share, three at 25c., and one at 15c. Levied, May 29th, 1875, January 13th, 1876, May 19th, 1876, February 17th, 1877, September 10th, 1877, January 18th, 1878, May 28th, 1878. Total assessments, \$222,500. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, California Stock and Exchange Board, and New York Mining Stock Exchange.

This mine was located May 19th, 1863, in Gold Hill Mining District, Storey County, Nevada, on what is known as the East Ledge, lying about 1,000 feet in front and parallel to the main Comstock Lode, opposite the Crown Point and Beleher mines. The location is 2,000 feet in length by 200 feet in width. The vein crops nearly the whole length of the claim. Very little was done to explore this mine for ten years subsequent to date of location, but during the year 1874, the East Ledge was proven to be a true ore channel, and this mine, from its favorable location, soon found its way into the possession of a San Francisco corporation, when suitable machinery was erected, and the work of sinking a good working shaft immediately commenced. The work of developing the mine has been vigorously prosecuted for a period of four years, and a depth of 750 feet has been reached. The vein has been penetrated and explored to a greater or less extent on the 100, 200, 600, and 750-foot levels. On the 600-foot level the west wall of the ledge was penetrated ninety feet east from the shaft, and explorations were pushed both north and south on the vein for a distance of over 1,000 feet, showing a strong vein, of an average width of thirty feet, running nearly north and south, the walls, especially the west wall, being well defined. The ledge has an easterly dip of 48°. The vein matter on this level is quartz, soft porphyry and clay, with low grade ore; one point, however, showing a body of pay ore of considerable magnitude, which commenced to form a few feet above this level. An incline has been sunk in the foot wall of the ledge from the 600 to the 700-foot level, from which drifts are being run both north and south in the foot wall parallel with the vein, preparatory to crosscutting and exploring the vein at this depth. The steady and uninterrupted work of developing this mine, and the low average cost of the same, speak in terms of compliment to its managers, not usually accorded to the management of Comstock mines.

LEWIS CONSOLIDATED MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA.

Office, 310 Pine Street. W. H. Bothe, president; J. W. Pew, secretary; S. W. Blakeley, superintendent; Wm. H. Bothe, J. O. B. Gunn, W. S. Hopkins, H. T. Scott, W. H. Bluet, trustees. Annual meeting, fourth Wednesday in March. No. of shares, 60,000. No. of feet, 3,000. Shares per foot, 20.

This property is located in Pinal County, Arizona, three miles southeasterly of the Silver King, situated near Queen Creek, upon which it has a good mill-site. It is conveniently located for working, and indeed has remarkably excellent facilities for development. It is termed an iron-capped ledge, and appears on the surface to be large and well defined. The only work done so far is an open cut run across the ledge, in which is found some exceedingly rich argentiferous lead ore. A contract has been let for sinking a shaft, and work has been begun. This shaft will fully develop the mine and determine its real worth. The location is regarded by mining experts as remarkably fine.

LExINGTON MINING COMPANY.

GOLD HILL, NEVADA.

Office, 240 Montgomery Street. Silas Selleck, president; H. B. Congdon, secretary; Joseph M. Smith, H. B. Congdon, Silas Selleck, H. F. Morris, Edwin F. Selleck, trustees. Annual meeting, second Wednesday in May. No. of feet, 1,800. No. of shares, 100,000. No. of assessment, 1. Amount, 5c. per share. Levied, November 10, 1876.

The Lexington mine lies due south from the Caledonia, Overman, and Justice works, west from the Silver Hill and Succor, and north from the Atlantic Con., South End, etc. It commences about 1,200 feet south of the Justice works, and runs thence southerly 1,800 feet to American Ravine. The mine has been prospected by an incline shaft sunk on the ledge to a depth of 130 feet, and by a smaller shaft 30 or 40 feet deep, with drifts, etc., and also by a tunnel started from the ravine, which will strike the ledge at a depth of 800 feet below the croppings. The shaft shows a ledge from 10 to 12 feet wide, and produces ore giving assays from \$20 to \$50 per ton, of which several lots have been worked. For several years past, work has only been done yearly to hold the claim, but work in a systematic manner will soon be started. The indications of a paying mine have been pronounced to be excellent by some of our best miners and experts, and the location is in the direct line of important developments now being made, and is believed to be valuable.

LONE STAR AND ECLIPSE CONSOLIDATED MINING COMPANY.

COSO DISTRICT, INYO COUNTY, CALIFORNIA.

Office, 80 Nevada Block. B. B. Minor, president; Daniel Buck, secretary; J. S. Childs, superintendent; B. B. Minor, J. B. Haggin, Geo. Hearst, S. McMasters, Daniel Buck, trustees. Annual meeting, second Wednesday in September. No. of shares, 60,000. No. of feet, 3,000x600.

LOW RANGE LEDGE SILVER MINING COMPANY.

VIRGINIA.

Office, Room A, 507 Montgomery Street. Samuel Purdy, president; F. E. Luty, secretary; John McMahon, superintendent; Samuel Purdy, B. S. Bernard, J. S. Luty, S. L. Theller, E. N. Hooper, trustees. Annual meeting, fourth Monday in October. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50. No. of assessment, 2. Amount, 2c. per share. Levied, September 11, 1876, April 2, '78. Total assessments, \$4,000.

MAMMOTH BAR GOLD MINING COMPANY.

MIDDLE FORK AMERICAN RIVER.

Office, Room 15, 310 Pine Street. M. P. Dewey, president; J. W. Pew, secretary; M. P. Dewey, James M. Seawell, Rufus Shoemaker, A. H. Hagadorn, George C. Ludington, trustees. Annual meeting, fourth Friday in July. No. of shares, 100,000. No. of acres, 40.

During the past few years, a new style of placer mining has begun to be introduced in California, and which, where the conditions are favorable, is likely to be attended with much success. There are, along the auriferous rivers of the State, bars that occupy what were the former beds of these streams, the latter having been diverted from their courses at these points and forced to make for themselves new channels. As the lower and richer portions of these bars lie below even low-water mark, they cannot be worked without provision being made for relieving them of the seepage water, which generally comes in in such quantity as to require powerful pumping machinery for its removal. As such machinery is rather costly, only parties having command of some means can embark in this kind of mining with much hope of success, such as have tried it with inadequate appliances of this sort, having generally failed. As it is only this bottom stratum that is rich in gold, it becomes desirable that this alone should be removed, the superincumbent mass, which has already been worked over, being left undisturbed. To effect this purpose, a shaft is sunk as low or a little lower than the bottom of the bar to be worked, and a tunnel driven in to the latter. As much of this rich stratum as will pay, is then drifted out, and through the tunnel and the shaft brought to the surface, where it is washed in sluices, the water pumped out through the shaft being used for that purpose.

It is for the prosecution of an enterprise of this kind, that the above company has been formed, the site of their operations being what is known as Mammoth Bar, situated on the middle fork of the American River—a classic locality in the mining annals of California. Half a mile below this is "Murderers' Bar," fitly named for the tragic event that occurred there in the memorable year '49. Hardly anywhere in California have the river bars paid better than along this stretch of the middle fork, their enrichment having been due to the destruction by this stream of various "dead rivers" that, in the Pleocene Age, traversed this section of country. Among these bars the Mammoth, besides being one of the largest, as its name implies, has been one of the richest. The method by which the company will attack it, will be the one above described. In sinking their shaft, they have it in contemplation to contract with the Western Well-Boring Company to do this work by the novel plan of boring with a sort of huge rod auger, capable of cutting a hole six feet in diameter. A strong wooden tube, following the auger, is forced into this excavation as it advances downward. If this plan of sinking a shaft shall be here found practicable, it will much expedite and cheapen the construction of the work. As this company have a rich locality upon which to operate, and possess ample means to do thorough work, the enterprise can hardly fail to eventuate in a great success. Having completed their surveys and other preliminary arrangements, the business of opening up the ground will commence in a few days.

MAMMOTH MINING COMPANY.

LAKE, MONO COUNTY, CALIFORNIA.

Office, 302 Montgomery Street. George S. Dodge, president; B. R. Zantlinger, secretary; Edward Clarke, superintendent; George S. Dodge, Thomas Bell, Solomon Heydenfeldt, Milton Lambeth, A. W. Rose, Jr., trustees. Annual meeting, third Tuesday in June. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

This mine is located fifty miles south of Bodie, near the summit of the Sierra Nevada Mountains, and about five miles from the headwaters of the San Joaquin River. The entire surrounding country is densely timbered with tamarack, pine, and fir. Close to the mine are eight mountain lakes, main sources of the Owens River. The company is vigorously at work developing their property, having already put up a first-class 20-stamp mill, driven by water-power, to which the ore is carried from the mine by chute and tramway. In view of the large quantity of ore the mine is likely to yield, it is proposed to increase the number of stamps as soon as possible. This lode, which carries a rich gold and silver-bearing ore, is from 60 to 70 feet in thickness, and crops out in great strength. The ore resembles that from the Constock Lode, and assays at the rate of about \$75 per ton. The ore in sight is estimated at about eighty thousand tons. The tunnel being driven will cut the lode at a depth of one thousand feet below the croppings, and will afford an adit for drainage and ore extraction to that depth. The company's mill has just started up, and bullion shipments are expected to be kept up continuously in the future.

MANHATTAN SILVER MINING COMPANY.

KRESS RIVER, LANDER COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. John A. Paxton, president; John Crockett, secretary; Allen A. Curtis, superintendent; C. P. Hubbell, W. S. Gage, J. S. Porteous, John A. Paxton, A. K. P. Harmon, trustees. Annual

meeting, first Wednesday in February. No. of shares, 50,000. No. of feet, 129,810. No. of dividend, 8. Amount, \$50,000. Declared, February 1, 1877. Total dividends, \$400,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The mines, reduction works and various other properties of this company are situated on Lander Hill, an eminence immediately adjacent to and overlooking the town of Upper Austin. The mines of the company, comprising 126 different claims on a great number of distinct lodes, are all early locations, the company itself being one of the pioneer organizations of the district. These claims cover mineral-bearing veins to an extent measuring 129,810 linear feet, and embrace most of the valuable lodes on Lander Hill. The area of mineral land here owned by the company and secured by United States patents amounts to 159 acres. This, if not the largest tract of mining ground so secured in the State, covers no doubt the greatest number of fertile veins contained in any such tract, there being in Lander Hill, as deep explorations show, numerous blind lodes in addition to the great number traceable by their surface croppings. As these lodes lie mostly near and parallel with each other, the plan of exploring them by means of incline shafts and crosscuttings from the one to the other has been adopted. By this method lodes that in some instances have, in their upper sections, been "faulted," have been recovered in the lower workings, where also, if the ore chimney is found to pinch or go out at one point, the supply is ample at some other. These bonanzas, though narrow, are numerous and rich, the quality of the ores holding up well so far as the mines have been opened. A number of these shafts have been sunk at different points, some of them to a depth of over 800 feet, to which level the entire series of lodes has been pretty thoroughly explored. The ledges on Lander Hill are generally narrow, varying in width from two to four feet; but they are apt to be compact and regular and carry large quantities of high grade ore of the sulphuret and ruby varieties. The mines have now been worked for about 16 years, for over 12 years very actively, the product of bullion during this time having averaged over \$100,000 per month—fully one million and a quarter per year. The yield of the ore throughout this period has been at the rate of \$250 per ton, a higher average grade than has ever been reached by any other largely productive mine on the Coast. Although worked for so long a time and yielding so abundantly, this, as an entirety, may be considered a virgin mine, the present resources being of immense extent and the ore bodies coming in on the lower levels in great strength. The reduction works of the company consist of a 20-stamp mill with concentrating apparatus having capacity to handle 40 tons per day. For roasting the ores a Stetefeldt furnace has been put up, superceding the old style of reverberatory furnace formerly in use. Connected with the establishment are capacious shops, assay office, dwellings, outhouses, etc., effectual measures having been adopted for protecting the whole against fire. All these improvements have been paid for and current expenses met out of the net earnings of the property, leaving a surplus of nearly half a million to date, to be divided among the shareholders. Notwithstanding this good record, it is not probable that the future of this fine estate will in the least disparage its past history. The property is of immense extent, splendidly outfitted and ably managed. The mines are well opened and the ores rich and abundant, the lodes themselves giving every evidence of permanence. The workings are now far below the zone of surface disturbance, where slips and breaks at one time caused much uneasiness and trouble. Through these or like causes ore extraction will not again be intermitted, nor is it easy to see why bullion production should not go on without interruption or abatement in the future.

MARTIN WHITE MINING COMPANY.

WARD DISTRICT, WHITE PINE COUNTY, NEVADA.

Office, 59 Nevada Block. Annis Merrill, president; J. J. Seville, secretary; Henry Sweetapple, superintendent; Annis Merrill, John A. Hooper, Chas. H. Stanyan, E. D. Sawyer, Romualdo Pacheco, trustees. Annual meeting, third Thursday in August. No. of shares, 100,000. No. of feet, 22,900. Shares per foot, 4. No. of assessment, 3. Amount, \$2 each and \$1. Levied, July 9 and September 1, 1877. Total assessments, \$500,000. Bullion yield, \$527,241.37. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The important group of mines and valuable property and franchises belonging to this company are located in the Ward District, White Pine County, Nevada. The mine includes the following: Paymaster, 1,500 feet; Defiance, 1,500 feet; Mountain Pride, 1,500 feet; Young America, 1,500 feet; Caroline, 1,500 feet; Mammoth, 1,500 feet; Ben Lomond, 1,500 feet; Ben Voirlick, 1,500 feet; Land Grampus, 1,500 feet; Home Ticket, 1,500 feet; Wisconsin, 1,500 feet; Ben Nevis, 1,500 feet; Maggie, 1,500 feet; Cyclops, 1,500 feet; Nestor, 1,500 feet; Ward & Henry, 200 feet; Alameda, 200 feet. The company have United States patents for the first four mines in the above list, and for six mill sites connected with the same, and with the Caroline and Mammoth, for 200 acres as a town site; 1,040 acres of agricultural land, and 160 acres of timber, and own all the water rights in the district. Though none of these mines, or other property, were located prior to 1872, the company have expended more than a million dollars in developments and improvements. They have much valuable machinery; have run tunnels, made roads, laid pipes for the supply of water, which is brought quite a distance. Among their property are two water jacketed furnaces, which cost \$30,000; four Cupel furnaces, for refining silver, which cost \$14,000; a leaching mill, for working some of their ores; six kilns, for making charcoal, which cost \$20,000; ten miles of good roads, and they are building a wire-eable tramway from their lower tunnel to the general ore house, about 9,000 feet in length, and a new 20-stamp mill that will cost \$100,000, which is contracted to be

completed by 3rd of November, 1878. There is ore enough on the dumps, and in sight, sufficient to run their mills for a year, at the rate of 50 tons a day. This ore will average \$70 per ton, some of it running much higher. The mines of the company have already produced \$527,000 worth of bullion, by furnace process; but the greater portion of the ores obtained at greater depths can be worked by the ordinary mill process. They only use the furnace for a class of ores which are becoming scarce as the veins are worked at greater depths. These smelting ores are found to contain more of the precious metals than the milling ores. The furnaces of the company can reduce 30 tons daily, and produce \$60,000 worth of bullion monthly on an average. The company's laboratory and assaying works are furnished with all the modern improvements, and they intend to erect such other reduction works as the development of their mines may require. At present the ores are obtained through three tunnels, 1,200, 1,300 and 1,700 feet in length. Altogether, this company has one of the most important and valuable properties in the State of Nevada. This location is easy of access, being about 110 miles easterly from the terminus of the Eureka Railroad, which connects with the Central Pacific Railroad at Palisades. The new town laid out by the company is about 6,000 feet above the level of the sea; the climate mild and salubrious, and wood and water abundant.

MARYLAND MINING COMPANY.

GLOBE HILL, STOREY COUNTY, NEVADA.

Office, Room 20, 331 Montgomery Street. S. Heydenfeldt, president; C. A. Sankey, secretary; E. Strother, superintendent; S. Heydenfeldt, J. B. Low, A. K. Grim, W. B. Boyden, E. Strother, trustees. Annual meeting, first Tuesday in June. No. of shares, 54,000. No. of feet 900. No. of assessment, 1. Amount, 10c. per share. Levied, May 9th, 1877. Total assessment, \$5,400. Listed on San Francisco Stock and Exchange Board.

MATAMORA CONSOLIDATED MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, Room 12, 511 California Street. Ira G. Hoitt, president; J. Pentecost, secretary; F. A. Wilder, superintendent; A. W. Sisson, F. A. Wilder, Dirville Libby, Ira G. Hoitt, J. Pentecost, trustees. Annual meeting, fourth Tuesday in August. No. of shares, 60,000. No. of feet, 5 claims, 1,500 feet each.

MAYBELLE CONSOLIDATED MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; R. N. Graves, Wm. M. Stewart, Wm. B. Carr, Wm. F. Herrin, A. J. Ralston, trustees. Annual meeting, second Monday in September. No. of shares, 64,000. No. of feet, 1,125. Shares per foot, 56 8-9. Listed on San Francisco Stock and Exchange Board.

This company is a creation from the consolidation of the Maybelle and the Aurora Tunnel Mining companies. The main shaft is down a distance of 197 feet, and work is being vigorously pushed ahead. There have also been crosscuts run. A great amount of vein matter is exposed, carrying gold and silver. It is a rich prospect; and a whim is being erected for the purpose of deeper development. A U. S. patent has been applied for.

MAYFLOWER SILVER MINING COMPANY.

BRISTOL, LINCOLN COUNTY, NEVADA.

Office, Room 15, 310 Pine Street. P. S. Van Rensselaer, president; J. W. Pew, secretary; Frank Wheeler, superintendent; C. Stevens, P. J. Van Rensselaer, M. J. McDonald, Dolos Lake, Jas. M. Day, trustees. Annual meeting, fourth Wednesday in December. No. of shares, 100,000. No. of feet, 800.

The Mayflower mine is one of a series of deposits which have been found and worked in the Bristol Range, near the famous mining camp of Pioche. Of these deposits, the best known are the Day mine, the Hillside, and the Mayflower. Their situation is such that a straight line might be drawn through the three claims, which seems to prove that all are upon the same belt, and that the characteristics of the one may be repeated in the other.

The Mayflower has been developed by an incline over 200 feet in depth, and by a northerly drift, nearly 150 feet in length, and also, by a number of shorter drifts. The vein has been found throughout the work. It carries a mixture of carbonate of lead, and silver, and silver-bearing iron ore, all of which adapts it for smelting. With the recent successful introduction of smelting furnaces in the vicinity, this ore can now be worked to much better advantage than in the past, when it was hauled many miles to an ordinary pan mill. All indebtedness has been cleared off, and arrangements are now made for the resumption of active work.

MCCLELLAN CONSOLIDATED GOLD AND SILVER MINING COMPANY.

BIOLZ, STOREY COUNTY, NEVADA.

Office, Room 20, Safe Deposit Building. Seth Marshall, Jr., president; Otto Metchke, secretary; Seth Marshall, Geo. W. Deitzler, R. Pahl, W. O. Gould, R. Pennel, trustees. Annual meeting, 13th day of December. No. of shares, 103,000. No. of feet, 4,500. Shares per foot, 24. Listed on California Stock Exchange Board.

MCCLENTON MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, San Francisco Stock Exchange. Geo. S. Dodge, president; Wm. H. Lent, secretary; Geo. S. Dodge, S. Hydenfeldt, Sr., J. Miller, E. B. Pond, A. W. Rose, Jr., trustees. No. of shares, 60,000. The location embraces a series of parallel ledges.

This mine is named after Judge McClinton, an old pioneer, and long resident of the district. It lies south of the Bechtel and west of the north half of the Standard mine, and embraces the

Eshington ledge, and others of early fame. There are, at least, half a dozen parallel veins belonging to this company, some of which are very promising. The work of development is going forward steadily, and there is every reason to expect that the McClinton will soon rank among the paying mines of Bodie.

McCRACKIN CONSOLIDATED MINING COMPANY.

OWEN DISTRICT, MOHAVE COUNTY, ARIZONA TERRITORY.

Office, Rooms 6 and 7, 211 Sansome Street. Hon. Eugene Casserly, president; H. Augustus Whiting, secretary; W. E. Stronach, superintendent; Hon. Eugene Casserly, I. C. Bateman, Hon. Geo. C. Perkins, L. M. Kellogg, T. C. Lampe, trustees. Annual meeting, third Monday in October. No. of shares, 100,000. No. of feet, 4,500. Shares per foot, 22 2-9. No. of assessment, 1. Amount, \$50,000. Levied, July 10, 1878. Total assessment, \$50,000. Bullion yield, \$670,312.91.

This mine, which was discovered by Jackson McCracken, whose name in part it bears, in the month of August, 1874, is situated on a great mineral-bearing range that here traverses Mohave County. It is distant about six miles north from Bill Williams Fork, twelve from Greenwood, on the Big Sandy, and thirty-five easterly from Aubrey, shipping point for this section of country on the Colorado River. The mining claims of the company, three in number, named respectively the Alta, Senator, and Palmetto, are located on a masterly lode, conspicuous here by its outcrop for a long distance, some eight or ten miles of it being covered by consecutive mining locations. The several claims of this company are situated on the crest of a mountain, some 2,000 feet above the adjacent plains, the Senator occupying the central position in the group. Each of these claims comprises 1,500 linear feet, giving the company 4,500 feet continuously on what may be considered the mother-vein of the country. The formation here is granite, the gangue consisting of alternate streaks of quartz and spar—this being what is termed a "band vein." Since passing into possession of the present company, the vein at this point has been opened to a vertical depth of 365 feet. The method of exploring the mine has been chiefly by tunneling, for which the precipitous sides of the mountain afford great facilities. The excavations of this kind made—shafts, main adits, and lateral drifts included—amount to 2,500 feet, all in ore. The underground works are connected by shafts and winzes, securing to them good ventilation. The work, as far as prosecuted, has been done with system and thoroughness. This ledge at the surface varies from 20 to 45 feet in width, these proportions being well preserved and even increased with depth attained. This is an earthy, oxidized ore, dry and friable, easily mined and milled—being crushed at the rate of four tons per day to the stamp—and susceptible of pretty complete amalgamation by the pan process. The first-class assays, on an average, about \$70, and the second-class about \$25, to the ton. The bullion turned out has heretofore been of good quality, running from 900 to 985 fine.

The weekly ore extraction runs at about 600 tons, which is broken down by 15 men, there being 35 hands employed in the mine and 54 in and about the mill, a very small working force for the amount of bullion turned out. Just at present a good deal of dead work is being done, it having become necessary to explore the lower levels of the mine for the purpose of opening up there new ore reserves. This has had the effect to curtail bullion production somewhat for the time being. When this work is accomplished, however, the yield will again come up to and very likely exceed the usual average, as the ore deposits here are of illimitable extent. The superintendent in his last letter to the directors states that an extensive body of good ore is being opened below the second level, and between that and the third, this being in new ground and giving assurance of a continuous ore supply. In February last the company started up their new 20-stamp steam mill, erected at a cost of \$96,000, the old 10-stamp mill before in use being of too limited capacity and located too far away from the mine to be longer run to advantage. Although this new mill, which is located nine miles from the mine, is doing good work, putting through over 600 tons of ore weekly, the company will probably find it expedient to build, in the near future, a much larger establishment, placing it closer to the mill and connecting the two with a railroad. Appurtenant to the present mill is an assay office and the other accessories and appliances required by first-class reduction works. A foundry, with cupola furnace, has also been put up near the mill, at which old shoes and dies are recast, and worn out and broken machinery replaced, an economical provision in a region so remote from larger works of this kind. To this company is due the credit of having made the first large and profitable bullion production in northwestern Arizona, a section of country that, at the time they commenced operations was beset with innumerable difficulties, retarding the progress of the work and rendering the improvements tedious and costly. Having overcome the many obstacles incident to the inauguration of mining enterprises in a region so far removed from its chief supply point and suffering from inadequate transportation facilities, this company may justly count on a greatly increased prosperity, now that this class of facilities is so much improved, while these obstacles have been either wholly, removed or greatly diminished. By referring to the above list it will be seen that the management of this company is in good hands, the official staff embracing experienced miners, and some of our foremost professional and business men.

MEADOW VALLEY MINING COMPANY.

ELY DISTRICT, PICHIE, NEVADA.

Office, 414 California Street. Richard Wegener, president; T. W. Colburn, secretary; J. R. Duff, superintendent; J. P. Kelley, W. H. Taylor, E. V. Joice, Alpheus Bull, Richard Wegener, trustees. Annual meeting, fourth

Thursday in August. No. of shares, 60,000. No. of assessment, 14. Amount, 75 cents. Levied, June 6, 1877. Total assessments, \$509,781.44. No. of dividend, 18. Amount, \$1. Declared, July 15, 1873. Total dividends \$1,200,000. Bullion yield, \$5,197,948.78. Listed on San Francisco Stock and Exchange Board.

At present, the work of this mine is confined to some ores still found above the water-level, 1,200 feet from the surface, and in working the "mill-tailings." The mill has been completely overhauled and put in perfect working order. A contract has been made for leaching the screenings and dumps. Strenuous efforts are making to get the machinery over the mountains, and it is believed that as soon as this is completed prospecting will be advanced to great advantage.

MEMNON MINING COMPANY.

DEVIL'S OATE, NEVADA.

Office, 419 California Street. A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, J. L. Requa, J. D. Fry, A. J. Ralston, W. E. Dean, trustees. Annual meeting, second Tuesday in January. No. of shares, 73,000. No. of assessment, 1. Amount, 5 cents. Levied, March 15, 1878. Total assessments, \$6,500.

MEXICAN GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, 208 Bush Street. C. L. Weller, president; C. L. McCoy, secretary; Wm. Patton, superintendent; C. L. Weller, Geo. Wallace, J. H. Dobinson, C. H. Fish, Geo. R. Wells, trustees. Annual meeting, first Tuesday in December. No. of shares, 100,800. No. of feet, 600. Shares per foot, 168. No. of assessment, 5. Amount, 50c. per share. Levied, May 15, 1878. Total assessments, \$221,760. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Mexican adjoins the Ophir on the north, between that mine and the Union Con. It was segregated from the Ophir as recently as 1874, and has been prospected through the shaft of that company, having neither shaft nor machinery of its own. Thus far, it has extracted less than one thousand dollars' worth of bullion, for an expenditure of \$220,000. The theory of the managers of the mine being that, at the proper depth, they will strike the same bonanza known to exist in the Ophir and Sierra Nevada, all the funds of the company have been expended for this object. All the drifts started in search of it are run from the Ophir shaft. Drifts are now being run at 1,600, 1,900, and 2,000 feet from the surface. The latest reports from the Superintendent inform us that there are good indications of ore on the lower levels.

This company has effected a great saving in expenditure by uniting with the Ophir in running a joint drift to the east on the 1,900-ft. level, and with Union on the 1,600-ft. level, each company defraying one-half the expense of the work of exploration, in which they are all equally interested.

MIAMI MINING COMPANY.

GLORE DISTRICT, PINAL COUNTY, ARIZONA.

Office, Room 3, 240 Montgomery Street. Clinton Gurnee, president; J. L. Fields, secretary; Clinton Gurnee, I. C. Bateman, Sol. Sweet, T. W. Hadley, W. Townsend, trustees. Annual meeting, fourth Friday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Bullion yield, \$10,000.

MIDDLE HILL MINING COMPANY.

ESMERALDA COUNTY, NEVADA.

Office, Room 13, Safe Deposit Building. Geo. Congdon, president; W. Letts Oliver, secretary; G. Daley, superintendent; R. G. Brown, J. M. Walker, W. S. Lyle, W. L. Oliver, Geo. Congdon, trustees. No. of shares, 100,000. No. of feet, 8,000.

This mine is near Aurora, Nevada, and lays between the celebrated Real del Monte on the one side and the old Antelope mine on the other. The property is composed of two early locations, named the Durand and the Live Yankee. Each claim contains 1,500 linear feet, and though not yet much developed, the ground has always been considered among the best on this famous hill. They were recently purchased by the present company, who will proceed to open them up in a complete and systematic manner, and we doubt not with the most satisfactory results. It may lie deep, but there is great wealth in this Middle Hill.

MINERAL FORK MINING AND SILVER COMPANY.

BIO COTTONWOOD, UTAH.

Office, Room 20, Safe Deposit Building. Geo. W. Deltzler, president; Otto Metelcke, secretary; Geo. W. Deltzler, Saml. Purdy, W. C. Pease, W. S. Campbell, James H. Van Vleet, S. N. Roberts, Selim Franklin, trustees. Annual meeting, first Monday in June. No. of shares, 60,000. No. of feet, 4,500. Shares per foot, 13 $\frac{1}{2}$. Bullion yield, \$10,000.

MINNIETTA BELLE MINING COMPANY.

LOOKOUT, INYO COUNTY, CALIFORNIA.

Office, Rooms 13 and 14, 318 Pine Street. G. L. Murdock, president; J. T. McGeoghegan, secretary; G. L. Murdock, J. H. Wise, I. H. Jacobs, S. C. Bates, J. B. Peck, trustees. Annual meeting, as per Code. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 2. Amount, 50c. per share. Levied, April 3, 1878. Total assessment, \$75,000. Listed on San Francisco Stock and Exchange Board.

MINT GOLD AND SILVER MINING COMPANY.

VIRGINIA DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 4, 401 California Street. H. C. Partridge, president; David A. Jennings, secretary; H. C. Partridge, S. P. Taylor, Alexander Leuthwaite, Geo. A. Travis, N. D. Thayer, C. H. Wakelee, D. L. Parkhurst, trustees. Annual meeting, last Tuesday in March. No. of shares, 50,000. No. of feet, 1,200. No. of assessment, 22. Amount, 20c. per share. Levied, Aug. 8, 1878. Total assessment, \$142,500. Listed on San Francisco Stock and Exchange Board.

MISSOURI AND SILVER LEAF MINING COMPANY.

The recent movements in the stock market, consequent upon the late rich developments on the Comstock, have prompted many parties who have for a long time allowed their properties to rest in idleness, to either proceed to systematic development, or prepare their mines for inspection and sale. Among those that have just come into prominence are the locations known as the "Missouri" and "Silver Leaf." These two properties are adjoining and are situated in the Gold Hill Mining District, and lie immediately south of the south line of the Sutro Tunnel grant, also southeast of the Julia Consolidated, and about 600 feet northeast of the New Yellow Jacket shaft. It will be perceived by reference to the maps that these locations are nearly on an air line with the late developments in the Alta on the south and the Sierra Nevada on the north. A United States patent has been secured for both of these locations. The Missouri contains 1,500 feet, and the Silver Leaf 1,375 feet, of which about 150 feet are covered by the Sutro Tunnel grant. The ground is well known in Virginia City as "the big ridge of croppings," south of the combination shaft of the Chollar and Savage mines. Prospecting has been done principally by running tunnels and drifts, which, with a shaft that has been sunk to a depth of 25 feet have demonstrated the existence of a ledge of "pay ore." The assays from the shaft run from \$4 to \$16 per ton, while the croppings run as high as \$60. An inspection of the locality will satisfy any competent judge that the claims are very happily located. There is no dispute as to title, and the present owners are anxious to associate with themselves capitalists who will at once proceed to develop, or if this be not feasible they are willing to sell. At the bottom of the shaft, the ledge has been found to be two feet and a half in width. A drift 150 feet in length has been run, intending to strike the ledge at a depth of 75 feet from the surface. There is still another tunnel, which, when prosecuted further, will strike the ledge at a depth of 250 feet. It will be necessary to push this tunnel about 350 feet further before the ledge will be reached. It may be suggested that the Hayward Company, which joins the above properties, has made arrangements with the Sutro Tunnel Company to run a lateral drift from the tunnel to their mine. The Missouri and Silver Leaf can effect a joint operation in this movement. Thus it will be seen that, considering all of the surroundings and advantages of these locations, they may be regarded as among the most desirable on that portion of the Comstock, and we gladly call attention to the property. Further information can be obtained from J. S. Cassidy, number 411½ California Street, room 2.

MODOCK CONSOLIDATED MINING COMPANY.

LOOKOUT, INYO COUNTY, CALIFORNIA.

Office, 310 Pine Street. W. C. Parker, president; J. W. Pew, secretary; C. J. Barber, superintendent; W. C. Parker, Robert Gardner, E. M. Fry, W. H. Wallace, H. H. Flagg, trustees. Annual meeting, second Tuesday in July. No. of shares, 100,000. No. of assessments, 6. Amount, 50 cents. Levied, Sep. 18, 1878. Total assessments, \$500,000. No. of dividend, 1. Amount, 50 cents. Declared, December 28, 1876. Total dividends, \$50,000. Bullion yield, \$885,979.97. Listed on San Francisco Stock and Exchange Board.

This mining property, which consists of five claims, viz: the Modock, Confidence, Lookout, Keyes and Hearst, consolidated under one name and ownership, is situated in the Argus range of mountains, about 12 miles east of the town of Darwin. The company also own an iron mine, from which they obtain all the iron required for flux, this being a smelting ore. Work was commenced here in 1876, and has been continued ever since, the mine being extensively opened and many valuable improvements put on the ground. The ore extracted, amounting to some 12,000 tons, and which carries silver and lead, with traces of gold, has yielded over a million of dollars, being at the rate of about \$83 per ton. Over 2,000 tons of crude bullion have been made, the value of which has ranged from \$275 to \$770 per ton. During the past year a great deal of prospecting has been done, resulting in some important ore developments on the 200 and 300-foot levels, and also in the 1,000-foot tunnel, being driven into the ground and assuring almost beyond contingency a successful future to the mine. Most of the ore heretofore has been taken from the Confidence and the Lookout claims, though the other portions of the ground are known to contain valuable mineral deposits. The company have now in operation two 20-ton water-jacketed furnaces, having capacity to smelt from 35 to 40 tons of ore every 24 hours. In addition to the bullion extracted, and the improvements made, the company have ore reserves in their mine to the amount of 5,000 tons, which shows a total assay value of \$200,000. During the past fiscal year this company has reduced a previously existing debt of \$123,000 to \$43,280, the finances being now in a healthful condition and the prospects of the mine altogether encouraging.

In running the new tunnel, which, when completed, will prospect the mine to a depth of 1,000 feet, a body of good ore was intersected at a distance of 350 feet from the mouth, which is likely to prove the most important ore find yet made in the mine. By removing the furnaces to the mouth of this tunnel as contemplated, the ore can be run to them in cars, avoiding both hoisting and hauling, thereby effecting a monthly saving of some \$15,000. As the percentage of milling ore is already large and increasing rapidly, a 15 or 20-stamp mill will soon be built for reducing this class of ore. Carrying, as it does, both milling and smelting ores, and containing a number of large and well-formed veins, the Modock may be considered one of the most fairly representative mines in Inyo County. Heretofore, this company, in common with all others operating there, have had many difficulties to contend with; the most of them growing out of our inexperience in the smelting of ores, high freight charges, the newness of the com-

pany, etc. Put as these obstacles are being gradually removed or overcome, a greater mining prosperity awaits, and is even now about being inaugurated in that region, which promises to make a much larger and less interrupted bullion production in future. Besides the properties and appurtenances enumerated, this company own various tracts of farming and timber lands, water franchises, etc., their mining supplies on hand being large and so varied as to cover everything required in that line. The total indebtedness of the company amounted in July last to only about \$70,000, against which they had, apart from the mines themselves, ore and property of various kinds to the value of \$260,000. Application for a patent to their real estate having been made, and a survey ordered, a Government title will, in due time, issue for the same.

MONARCH GRAVEL MINING COMPANY.

DOGTOWN, CALAVERAS COUNTY, CALIFORNIA.

Office, 426 California Street. Geo. F. Sharp, president; Frank B. Latham, secretary; Henry Hogarth, superintendent; Geo. F. Sharp, H. P. Wakelee, Robert Barton, Henry Rogers, W. W. Waidell, trustees. Annual meeting, third Saturday in June. No. of shares, 10,000. No. of assessment, 1. Amount, 75c. per share. Levied, December 1, 1878. Total assessment, \$7,500.

MONITOR BELMONT MINING COMPANY.

PHILADELPHIA DISTRICT, NYE COUNTY, NEVADA.

Office, 43 Nevada Block, 309 Montgomery Street. Oliver Eldridge, president; B. B. Minor, secretary; Samuel McMasters, superintendent; Oliver Eldridge, J. B. Haggin, Joseph Clark, George Hearst, B. B. Minor, trustees. Annual meeting, first Monday in August. No. of shares, 50,000. No. of feet, 6,400. Shares per foot, 8. No. of assessment, 7. Amount, \$25,000. Levied, April 23, 1878. Total assessment, \$162,500. No. of dividend, 3. Amount, \$25,000. Declared, December 2, 1873. Total dividend, \$75,000. Bullion yield, \$234,867.57. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

MONO GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Rooms 2 and 3, San Francisco Stock Exchange. C. A. Burgess, president; W. H. Lent, secretary; Geo. Daly, superintendent; C. A. Burgess, W. M. Leut, John F. Boyd, Thomas Eell, Lewis Teese, Jr., trustees. Annual meeting, first Thursday in September. No. of shares, 50,000. No. of feet, 750. No. of assessment, 1. Amount, \$25,000. Levied, August 28th, 1878. Total assessment, \$25,000. Listed on San Francisco Stock and Exchange Board.

The Mono mine consists of the south half of the Bodie location, and is 750 feet in length. A shaft for permanent working purposes has been commenced and is already down about one hundred feet, and has encountered the ledge carrying ore of low grade. Powerful hoisting works are being erected, with the view of a speedy and thorough development of the property. It is expected to find a continuation of the rich ore body of the Bodie mine.

MONUMENTAL MINING COMPANY.

GOLD HILL.

Office, Room 59, Nevada Block. S. Heydenfeldt, president; W. R. Townsend, secretary; E. W. Townsend, superintendent; S. Heydenfeldt, S. A. Raymond, George Townsend, J. J. Séville, W. R. Townsend, trustees. Annual meeting, second Tuesday in June. No. of shares, 90,000. No. of feet, 1,500. Shares per foot, 60. No. of assessment, 3. Levied (last) February 14, 1878. Total assessment, \$45,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

MORGAN MINING COMPANY.

OPHIR, PLACER COUNTY, CALIFORNIA.

Office, Room 3, 306 Pine Street. A. R. Perkins, president; Edward F. Stone, secretary; A. R. Perkins, N. Flech, I. W. Brown, A. J. Angell, E. D. Stone, trustees. Annual meeting, first Tuesday in October. No. of shares, 100,000. No. of feet, 1,500.

MORTIMER MINING COMPANY.

EUREKA COUNTY, NEVADA.

Office, 401 California Street. George F. Bragg, president; D. A. Jennings, secretary; George F. Bragg, S. P. Dewey, Wm. P. Dewey, G. T. Lawton, John A. Paxton, trustees. Annual meeting, second Tuesday in November. No. of shares, 60,000. No. of feet, 1,400.

MOUNT HOOD MINING COMPANY.

VIROINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, third Thursday in August. No. of shares, 100,000. No. of feet, 571. No. of assessment, 1. Amount, 10c. per share. Levied, August 5, 1877. Total assessment, \$10,000. Listed on California Stock Exchange Board.

MOUNT POTOSI CONSOLIDATED MINING COMPANY.

COLUMBUS, NEVADA.

The mines of this company are situated in the Columbus Mining District, Esmeralda County, Nevada, comprising the following mines and claims: The first easterly extension of the Northern Belle mine, 1,000 feet; the second easterly extension of the Northern Belle mine, known as the "Creole ledge," 800 feet; the first southeasterly extension of the Northern Belle mine, 200 feet. These extensions have been prospected by open cuts, shafts, tunnels, crosscuts, etc., which show the ledge to occupy a true fissure, with a breadth of over 40 feet between its walls. Throughout this ledge occur occasional bunches of chloride and sulphuret ores.

The croppings of the Northern Belle lode, after leaving the claim of the N. B. M. and M.

Company, bear to the west, in an irregular course, until they strike the Mt. Potosi mountain, where they split into several distinct and well-marked veins. The main ledge is called the Mount Potosi, on which the company have a claim 1,200 feet in length, secured by U. S. patent. They have also the first westerly extension of this mine, 400 feet in length. The other several branches of these croppings come together before leaving the company's ground, and as the whole of these branches or spurs belong to this company, no question as to their ownership can ever arise, giving cause for litigation. These croppings, throughout their entire length of 1,600 feet, show good milling ore, which assays from \$30 to \$160 per ton in silver, picked pieces going as high as \$300 in silver and \$200 in gold to the ton.

The work done on these ledges is as follows: On the western slope of the mountain, and at the west end of the patented claim, a shaft has been sunk 150 feet deep. This shaft shows an unbroken ledge throughout, and carries good milling ore from the surface down, the bottom being in good ore. A tunnel, 700 feet long, has been driven to the centre of the claim at a point some 300 feet east of the shaft. This tunnel cuts the ledge several hundred feet below the surface, the ledge thus cutting showing good milling ore.

This Mount Potosi group of claims, being on the same ledge with the Northern Belle mine, which has as good a record as any in the State, constitute a promising and valuable property, and one that strongly invites the attention of parties seeking to invest in a legitimate and well-conducted mining enterprise. For the purpose of developing, outfitting, and working this splendid property, the Mount Potosi Consolidated Mining Company was incorporated September 18th, 1878, under the laws of California, with their principal place of business in San Francisco, and a capital stock of \$10,000,000, divided into 100,000 shares of \$100 each. Of this stock, 25,000 shares have been set aside as a working capital, to be sold at one dollar per share. Over 13,000 of these shares have already been subscribed for, and it is expected that the whole will in a few days be taken up. Among the principal subscribers are: John H. Boalt, William Willis, John F. Boyd, James L. King, C. A. Richmond, John Sroufe, Henry Degroot, G. F. Glover, Thos. Guinean, N. Watson, Jos. T. Glover, J. T. Mathewson, W. W. Dodge, Frank G. Edwards, R. Abrams, J. Rosenthal, Jas. D. Whitney, with some others prominent in this community as capitalists, experts, or mining men.

MOUNTAIN CITY MINING COMPANY.

COPE, MOUNTAIN CITY, ELKO COUNTY, NEVADA.

Office, 327 Pine Street. Geo. S. Dodge, president; D. F. Verdenal, secretary; A. Plummer, superintendent; Geo. S. Dodge, John T. Bradley, A. Borland, S. F. Gashwiler, Miller Hawthurst, trustees. No. of shares, 100,000. No. of assessment, 1. Amount, 5c. per share. Levied, May 29, 1878. Total assessment, \$5,000.

MOUNT JEFFERSON MILL AND MINING COMPANY.

GAROTE DISTRICT, TUOLUMNE COUNTY, CALIFORNIA.

Office, 318 Pine Street. D. D. Shattuck, president; J. W. Clark, secretary; G. M. Condee, treasurer; N. C. Fassett, superintendent; S. B. Clark, G. M. Condee, F. G. Cleland, N. C. Fassett, D. D. Shattuck, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33½.

This company holds one of the most promising claims in Garote District, Tuolumne County, California. They have a 10-stamp mill, good hoisting works, and a jack-head pump, of sufficient capacity to keep the mine free from water. The shaft is 250 feet deep. The mill is now running on low grade ore, but yielding a good profit. The company has lately been reorganized, and the mine is being opened in good shape, and, no doubt, but will soon be paying dividends. In the year '69, '70, and '71, there was a large amount of ore taken from the old shaft, which averaged \$15 per ton, and aggregated over \$200,000. The old shaft and workings caved in, necessitating a new shaft. A volume of water in the new shaft, with no facilities for raising it, caused a suspension of the work, which has recently been resumed. With the facilities at hand the company can mine and mill their ore at a cost of about \$4 per ton.

MOUNTAIN VIEW SILVER MINING COMPANY.

VIRGINIA DISTRICT.

Office, Room 12, 310 Pine Street. E. P. Marsellus, president; T. E. Atkinson, secretary; Saml. E. Locke, superintendent; E. P. Marsellus, Geo. W. Towle, Jr., Wm. H. Fifield, Seth Marshall, Jr., Robt. Sherwood, trustees. Annual meeting, fourth Thursday in September. No. of shares, 100,000.

MURCHIE GOLD AND SILVER MINING COMPANY.

NEVADA CITY, CALIFORNIA.

Office, Room 6, Safe Deposit Building. A. Snider, president; S. D. Rogers, secretary; M. Garver, superintendent; A. Snider, S. D. Rodgers, J. Norfziger, E. T. Barber, G. G. Francis, J. C. Murchie, Jr., R. M. Fryer, Andrew Murchie, S. W. Lander, G. E. Bennison, E. G. Freeland, trustees. Annual meeting, third Tuesday in February. No. of shares, 100,000. No. of assessment, 1. Amount, 20c. per share. Levied, July 2, 1878. Total assessments, \$20,000.

This mining property, which lies about one mile east of Nevada City, California, comprises several early locations, presenting a notable example of the various kinds of gold mining prosecuted in this State; quartz, hydraulic and drift operations all now being or having been profitably carried on within the limits of the tract, which embraces an area of 439 acres, secured by United States patent. Within the boundaries of the claim are six quartz lodes, varying from two to ten feet in width, all more or less developed, and several of them very thoroughly opened up, the entire number yielding a fine, high grade, free milling ore. According to the

report of J. S. Phillips, a good authority, these veins occur in a geological formation especially favorable for the existence of permanent and prolific mines. The Red, White and Blue, the most northerly lode in this group, is about two feet thick, and, like the Lone Star, lies at a much lower angle than any of the others. The Big Blue has an average thickness of four feet and has but a slight inclination. The Alice Bell varies from two to four feet in thickness, and pitches to the north at an angle of 60 degrees. The Indian Hill has the same pitch, and averages three feet in width. The Independent is two feet thick, and pitches west at an angle of 40 degrees. The Lone Star is about three feet thick, the last two mentioned having a northerly and southerly, while the others have an easterly and westerly strike.

DEVELOPMENTS MADE.

Five shafts and inclines have been put down and three tunnels driven for the purpose of opening up and prospecting this series of lodes. On the Independent vein two inclines, one 300 and the other 400 feet deep, have been sunk, which shafts are to be connected near the bottoms by a drain tunnel carried in from Deer Creek, now nearly completed. From this 400-foot shaft a drift has been run south to the Big Blue ledge and along the latter 100 feet west, this ledge being here fully four feet thick. A drift has also been run on this level 200 feet east, showing the ledge well charged with ore twice as rich in gold as that found on the 200-foot level. The incline is now being sunk 100 feet deeper with a view to running drifts to both the Big Blue and Independent lodes on the 500-foot level. The Independent lode, at the lowest point to which it has been opened is 22 inches wide, firm and well walled, carrying a streak of about \$40 ore. A drift, starting from a deep ravine that wakes up from Deer Creek has been run southeast 380 feet, striking the Big Blue at a point 500 feet from its most westerly workings. The ledge here is fully five feet wide, and carries a better ore than any point above. By these various explorations a heavy reserve has been established on this vein, an ore body fully 800 feet long having been developed. A tunnel run 480 feet east along the Alice Bell ledge for sluicing purposes cut, in its course, the Lone Star lode, in what has since proved to be a large chute of high grade ore. Entering on the east side and sweeping through the center of the company's ground, is the channel of

ONE OF THE BURIED RIVERS,

Characteristic of this section of country, and which carry the auriferous gravel handled by the hydraulic process. The deposit here, which is rich and extensive, and which has been opened and outfitted ready for washing, yielded largely when worked in a former day. This is an interesting and valuable feature of the estate, being capable of being operated at any time either by the hydraulic or drifting methods, with large profits.

EXPENDITURES, INCOME, AND IMPROVEMENTS.

Upon this estate there has, to date, been expended \$130,000 in the construction of improvements, all now in good condition and available for working purposes. Among these improvements, apart from the exploratory work already alluded to, is an 18-stamp quartz mill and steam hoisting works, the mill being driven by water from the company's ditches while the water season lasts, and by steam power the balance of the time; a steam engine of sufficient capacity having been provided for the purpose. Among other additions recently made for facilitating operations and reducing expenses, are a wire tramway for conveying ores from the mines to the mill, supplemented with self-loading and self-dumping cars, air compressor with machine drills, besides many minor labor and money-saving devices.

On the ground are comfortable residences for workmen, outhouses and shops, with tools and implements of every kind needed. The most of the company's ground is covered with a fine growth of timber, much of it suitable for making good lumber. This ground, which for more than a quarter of a century, has been a large producer of bullion, is now turning out more gold than ever before, the net revenues being such that the property will be on a dividend-paying basis in the course of a few months more.

MUSSEL SLOUGH DITCH COMPANY.

TULARE COUNTY, CALIFORNIA.

Office, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, third Friday in October. No. of shares, 10,000.

The ditch, with its respective branches, has a total length of about sixty-five miles, with a varying width of fifty to one hundred and twenty-five feet on the surface. It commands an irrigating area of about fifty thousand acres of the richest agricultural land in the State.

NAPA CONSOLIDATED QUICKSILVER MINING COMPANY.

OAT HILLS, NAPA COUNTY, CALIFORNIA.

Office, Room 7, Safe Deposit Building. Vincent Neale, president; Wm. W. Parrish, secretary; M. G. Rhodes, superintendent; Vincent Neale, Theodore H. Hittell, Joseph M. English, Camilo Martin, Arthur K. Hawkins, trustees. Annual meeting, second Wednesday in November. No. of shares, 100,000. No. of dividend, 1. Amount, \$10,000. Total dividends, \$10,000.

The mines of this company are situated in Oat Hills, Napa County, California. The vein has large out-croppings of rich ores, varying in width from 5 to 50 feet—one already opened showing a vein of cinnabar yielding from 1 to 30 per cent. assays. These are comparatively new

mines, and operations, which have just been fairly commenced for their prospecting, are being vigorously prosecuted. A furnace, with \$20,000 machinery, has been erected, and the work of making roads, extracting ores and working them being diligently carried on. This work will be continued, and other furnaces erected as required, making the property payingly productive. About 50 laborers are employed in and about the mine and furnace.

NAVAJO MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. L. Browne, president; R. H. Brown, secretary; J. B. Dayton, superintendent; J. L. Browne, Thomas Cole, G. W. Grayson, E. M. Hall, M. Herman, trustees. Annual meeting, second Tuesday in August. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 4. Amount, 25c. per share. Levied, May 21, 1878. Total assessment, \$125,000. Bullion yield, \$49,661.80. Listed on San Francisco Stock and Exchange Board.

This mine is being opened in a skillful and systematic manner, a vertical, two-compartment shaft having been sunk upon it to a depth of 362 feet. At the 350-foot level a station has been excavated and timbered. On the 250-foot level some 280 feet of drifts have been run, but without cutting into any ore on this level. The vein matter has, however, improved so much for the past twenty feet, that pay ore will be reached very soon. On the 250-foot level 560 feet of drifts have been run, 212 feet being in a continuous ore body, in which an uprise of twenty-five feet has been made. This ore is from six inches to three and a half feet in width, the ore throughout being of good grade. A winze sunk from this level is part of the way in ore, the dip of the latter carrying it away from the winze at a depth of about fifty feet. On the 70-foot level 455 feet of drifts have been run, 365 feet being in pay ore. There are two incline shafts from this level to the surface; as they rise the ore chute extends to the south. The dumps contain 300 tons of first, and 200 of second-class ore, which amounts are being daily increased. Good steam hoisting works have been put up on the mine, these being supplemented with pumps, etc. All needed shops, dwellings, etc., have, also, been provided, the company having on hand tools and supplies sufficient to last for a long time. This company own, jointly with the Independence, a good 10-stamp mill, and a White's roasting furnace, with apparatus, chemicals, quicksilver, etc. Their receipts for the past year have amounted to \$187,498, and expenditures to the same.

NEGUILLA SILVER MINING COMPANY.

PIMA COUNTY, ARIZONA TERRITORY.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edwd. F. Stone, secretary; C. Gurnee, Fred. W. Hadley, J. H. H. Williams, H. H. Johnston, E. F. Stone, trustees. Annual meeting, first Thursday in October. No. of shares, 100,000. No. of feet, 1,500.

NEVADA GOLD AND SILVER MINING COMPANY.

OLD HILL, NEVADA.

Office, Room 26, 419 California Street. J. J. Green, president; Jacob Stadtfeld, Jr., secretary; A. Lawson, superintendent; J. J. Green, J. L. Armstrong, Benj. Dore, W. B. Murdoch, A. Lawson, trustees. Annual meeting, first Monday in January. No. of shares, 40,000. No. of feet, 3,000, on Ledges 1, 2, and 3. Shares per foot, 13½. No. of assessment, 3. Amount, 10c. per share. Levied, January 7, 1878. Total assessments, \$4,000.

NEVADA GRAVEL MINING COMPANY.

NEVADA CITY, NEVADA COUNTY, CALIFORNIA.

Office, Room 12, 511 California Street. S. F. Bufford, president; J. Pentecost, secretary; H. W. Messinger, superintendent; H. H. Wood, S. F. Bufford, L. H. Varney, M. Green, Ira G. Hoitt, trustees. Annual meeting, second Tuesday in January. No. of shares, 50,000. No. of acres, 10. No. of assessment, 3. Amount, \$5,000 each. Levied, May 14, July 8, and Sept. 4, 1878. Total assessments, \$15,000.

NEWARK GOLD AND SILVER MINING COMPANY.

ELY, NEVADA.

Office, Room 17, 419 California Street. A. H. Yeazell, president; W. H. Allen, secretary; A. J. Blair, superintendent; A. H. Yeazell, J. L. Armstrong, H. A. Sweet, A. C. Wightman, G. C. Reeve, Jr., trustees. Annual meeting, third Monday in July. No. of shares, 32,000. No. of assessment, 14. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

NEW COSO MINING COMPANY.

COSO, INYO COUNTY, CALIFORNIA.

Office, 327 Pine Street. L. L. Robinson, president; D. F. Verdenal, secretary; J. J. Williams, superintendent; L. L. Robinson, Thos. Bell, Alex. Forbes, Geo. W. Kidd, Leopold Kuh, trustees. Annual meeting, May 4th. No. of shares, 100,000. No. of assessment, 8. Amount, 50 cents. Levied, March 20, 1878. Total assessments, \$400,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The New Coso mining properties are located in Inyo County, California, and produce base bullion, an admixture of silver and lead. The company owns two mines, the "Christmas Gift" and "Lucky Jim," work having been principally confined to the latter, from which large returns in bullion have been made; not sufficient, however, even with the aid of assessments, to pay for improvements to counterbalance the cost of production. Labor is high; so is transportation; charcoal and other adjuncts to successful smelting. The property is now under the charge of Mr. J. J. Williams, a shrewd and careful manager, and the production is equal to present expectations. Large amounts have been paid in the erection of hoisting works, the building of three furnaces, construction of roads, etc., and it is to be hoped that the perseverance and determination of the company will shortly be rewarded.

NEW ENGLAND GOLD MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, Room 12, Cosmopolitan Hotel. Warren T. Lockhart, president; D. L. Thomas, secretary; R. D. Wade, superintendent; Warren T. Lockhart, Clinton Gurnee, E. C. Mayhew, C. L. McCoy, D. L. Thomas, trustees. Annual meeting, first Monday in September. No. of shares, 100,000. No. of feet, 1,600. Shares per foot, 62. No. of assessment, 1. Amount, 5 cents. Levied, June 22, 1877. Total assessments, \$5,000. Bullion yield, \$41,708.11.

NEW YORK MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. C. L. Weller, president; D. L. Thomas, secretary; Matt. Canavan, superintendent; C. L. Weller, A. K. P. Harmon, Gustav Frank, M. Mendheim, J. D. Fry, trustees. Annual meeting, last Wednesday in June. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 10. Amount, \$30,000. Levied, May 20th, 1878. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The mine of the New York company is situated in the Gold Hill District, west of the Alta, about 1,500 feet southeasterly of the Belcher, and directly east of the Overman ground—the location being on the same line of croppings with the Lady Washington claim, on the site of the Belcher and Crown Point bonanzas. The company have erected over their shaft hoisting works, having capacity to sink to a depth of 2,500 feet. These works are very complete, and are a complete duplicate of the Caledonia, and cost nearly \$125,000. The shaft has now reached a depth of 1,200 feet, having been extensively prospected on the 1,100-foot level, where there is very promising ground with much good vein matter, some of which has given assays as high as \$75 per ton. The south drift on this level has also shown some very fine quartz. The first crosscut on the 1,000-foot level, running northeast, is in 135 feet, at which point good ledge matter with streaks of ore has been broken into, all of which, considering the eligible site and surroundings of the mine, must be accepted as pointing to early developments of value. Work on this mine has run along smoothly ever since being started, as few interruptions and mishaps having occurred here as with any other company on the Comstock.

NOONDAY MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary. A. W. Fox, superintendent; Wm. M. Stewart, Wm. B. Carr, Wm. F. Herrin, F. K. Bechtel, Frank Tagliabue, trustees. Annual meeting, fourth Thursday in August. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

NORTHERN BELLE MILL AND MINING COMPANY.

ESMERALDA COUNTY, NEVADA.

Office, Room 29, Nevada Block. Isaac C. Bateman, president; William Willis, secretary; P. S. Euckminster, superintendent; I. C. Bateman, G. T. Lawton, Henry H. Allen, S. Reinhart, A. J. Holmes, trustees. Annual meeting, second Monday in September. No. of shares, 50,000. No. of dividend, 30. Amount, 21 per share. Declared, November 10, 1877. Total dividends, \$1,500,000. Bullion yield, \$3,754,018.55. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The Superintendent, in his annual report to the Board of Directors, under date of Sept. 4, 1878, says: "At the time of making my last annual report, the larger part of the work at the mine was being done through the tenth level tunnel; the only development upon the veins below that point being a winze sunk to a depth of 225 feet. A new shaft had been sunk to a depth of 205 feet, machinery erected thereon, and a drift just commenced at a depth of 200 feet. This drift has since been driven to the lode, a large amount of prospecting done, both upon that level and upon intermediate levels between it and the tenth level, the shaft has been sunk 200 feet, and a second level commenced 200 feet below the first, which is now driven out 300 feet in the direction of the lode. Upon the first level, the foot-wall portion of the lode has been found weak, generally, but two veins having yet been developed that afford stopes, and they not extending through any considerable distance. We have small ore veins, in two drifts, which are now being driven in this part of the mine. These have but recently come into the faces, and are showing improvement as we drive. To the front we have and are still developing a strong vein, which is opened upon through a distance of 125 feet, and which we are driving upon, in ore, in both directions. At its widest part there are twelve feet of pay ore, of fair grade. The vein, in one direction in which we are driving, is now presenting three feet of high grade ore, say, better than \$100 per ton. In the opposite direction the grade is from \$50 to \$60. We are now sinking a winze upon this vein, to connect with the shaft of the second level. It is down some 30 feet, with the ore grade improving as we sink. At the point where we commenced sinking, the vein is wide, and, as yet, we have not taken either the hanging or foot wall. If the conditions continue favorable, as at present, we will connect this winze with the level within the next ninety days. I expect to make other important developments upon this first level before we have done prospecting it.

"The mills are in excellent condition, and but one (No. 2) at present running. If our front vein continues to develop as favorably as at present, we will, at no distant future, have one enough opened upon to enable us to start up the other. During the past month our milling has not been successful, the tailings at times carrying away more than one-half of the assay value of the ore. I attribute the difficulty, or most of it, to the excessively hot and quiet weather which prevailed, and which checked the draft of the furnace to such an extent as to prevent the thorough roasting of the ores. The draft has been improved and the difficulty overcome, as is shown by the work of the past several days.

"Our contracts for salt and ore hauling have been let at the same figures as for the previous year. For wood and charcoal we have been compelled to submit to an advance, occasioned by the increased distances through which those supplies have to be delivered."

REMARKS OF A. J. HOLMES.

The Northern Belle Mine, Esmeralda County, Nevada, lies in the Columbus mining district, the ledge runs south 44° east, dips northeast. The hearing of the ledge varies in its course, as it strikes across numerous gulches and mountain spurs, for a distance of some 10,000 feet, still wherever cut it has good walls, with a clay seam between them, and the pay stratum of quartz. I might go on to describe the geological features of the mountains and country rock, mineral-bearing formations, as they are termed, but that is a theory of the past. Silver and gold is where you find it. The strike of the ledge in the Northern Belle Mine is south 44° east, to near the southeast boundary of the claim, where the ledge splits into two distinct, well-defined walls, and both appear to be fissure veins; the easterly ledge continues its course on through the first easterly extension of the Northern Belle and into the Creole ledge, or second easterly extension of the Northern Belle, where there has been a nice tunnel run into the same, with crosscuts made which show the fissure to be over forty feet between its walls, with occasionally bunches of rich chlorides and sulphuret ores.

The southeasterly vein hears in course south 26° 30" east, with good croppings, to near the Dinero, a little northwest from the Mount Diahlo, and appears to run parallel with it.

The croppings of the Northern Belle Mine, running northwest after leaving the Northern Belle claim, hear to the west, and still swing around to 20° south of west, when they cross the Mount Potosi Mountains, here the ledge splits into five parts on the surface, ranging from forty to 100 feet apart, thus forming a complete network, and called the Mount Potosi group of mines. A tunnel has been run into the mountains 700 feet, which cut the ledge at several hundred feet deep, where we find only two ledges, assaying \$30 to \$150 per ton; on leaving the mountain they come together and appear only as one ledge, striking south 70° west, continuing in its course for 3,000 feet, where the croppings disappear beneath the surface.

In all the surroundings of the Northern Belle ledge, it proves beyond a doubt, there is but one ledge, or what might be termed the great mother lode of the southwestern Nevada.

A brief history of the early workings of the Northern Belle Mine might interest many of the present stockholders.

This mine was located by A. J. Holmes, in October, 1865. There were many inconveniences at that early period which were rather discouraging, such as the want of the substantial of life, bacon and beans, flour, etc. Beef was rather of a luxury, we seldom saw it; game was very scarce; once in a while we would kill a badger, which was splendid; we could do but little more than prospect the mine till 1870, when there was a five-stamp mill built in Columbus and subsequently two more five-stamp mills, which now enabled me to get ore reduced and further develop the Northern Belle Mine, with very flattering prospects for the future. I continued work in prospecting the Northern Belle Mine to some 750 feet deep, run levels, tunnels, etc., until I found I had a mine with plenty of ore to warrant reduction works second to none in the State.

February 6, 1878, the Northern Belle Mine was incorporated in name of the Northern Belle Mill and Mining Company. From the location of the mine to the date of incorporation, I took out 2,549 1941-2,000 tons of ore, which was reduced at Columbus, and gave a net value of \$251,658.97. The gross expenses in sinking winzes, running levels, tunnels, etc., with all necessary buildings to carry on a first-class mining enterprise, cost the sum of \$279,930.44. In addition to this heavy expense, I paid some \$35,000 to quiet title, and then the mine and improvements I turned over to the Northern Belle Mill and Mining Company.

NORTH BELMONT MINING COMPANY.

PHILADELPHIA, NEVADA.

Office, Room 21, 419 California Street. A. K. P. Harmon, president; D. L. Thomas, secretary; A. K. P. Harmon, J. D. Fry, Robert Sherwood, H. C. Kibbe, Charles S. Neal, trustees. Annual meeting, third Monday in November. No. of shares, 50,000. No. of feet, 13,000. Shares per foot, 33. No. of assessment, 2. Amount, \$5,000. Levied, September 30, 1874. Total assessments, \$10,000.

NORTH BONANZA MINING COMPANY.

FLOWERY, STOREY COUNTY, NEVADA.

Office, 47 Nevada Block. Jos. Clark, president; W. W. Stetson, secretary; J. G. Rule, superintendent; Jos. Clark, Charles H. Fish, R. N. Graves, John Skae, A. K. P. Harmon, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,000.

The North Bonanza lies to the east of and adjoining the Flowery, it being the eastern 1,000 feet of the original Flowery location, which is situated to the north and east of the Sierra Nevada. The present surroundings of this mine are very favorable, and the prospects propitious. It is intended to proceed with the work of development at the earliest possible moment.

NORTH CARSON SILVER MINING COMPANY.

EAOLE VALLEY, ORMSBY COUNTY, NEVADA.

Office, Rooms 32 and 33, 318 Pine Street. J. I. Ayres, president; J. W. Morgan, secretary; A. S. Gould, superintendent; J. I. Ayres, W. O. M. Berry, N. Andrews, O. H. Bogart, George L. Woods, trustees. Annual meeting,

third Monday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 7. Amount, \$30,000. Levied, September 27, 1878. Total assessments, \$95,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The North Carson is the pioneer in the district round the city of Carson, capital of Nevada. The location lies about 2 $\frac{3}{4}$ miles north of the city, on a line of croppings which can be traced directly through American Flat to the Comstock. The ore taken from the mine bears all the characteristics of Comstock, and, as greater depth is gained, assumes the open and porous appearance of that ore. The first prospectings were conducted from the line of croppings on the surface. The vein widened from a few inches on the surface to three feet eight inches at the depth of 30 feet. A tunnel was then run in to the ledge, cutting it 94 feet below the surface, where it was found to be 12 feet 10 inches wide, and to widen out rapidly toward the north, where an ore body was laid bare over 100 feet, and made ready for crosscuts to open it up. The vein was again struck on the 200 and 250-ft. levels, and found to be richer than on the upper level. Assays made at the Branch Mint at Carson range from \$5 to \$2,132.17. The company have a large quantity of milling ore in their ore-house at the mine, waiting reduction. New and powerful hoisting works have been put up on the mine, at great cost, and having capacity to carry the shaft to a depth of 3,000 feet. The main shaft is now down 500 feet, ample crosscutting having been made on the various levels, all revealing good ore. It is a double-compartment shaft, vertical, and well timbered. Connected with the mine are shops, office, dwelling-houses, etc.; the company boarding and lodging their workmen on the ground. They have also secured 40 acres of land adjacent to their mine for dumping-ground and the erection of such other buildings as may be required. The operations of this company have been conducted with marked energy and economy, they having been fortunate in securing the services of a first-class superintendent in the field. Shareholders may rest assured of two things, namely, that the money expended on this property will be laid out to the best advantage, and that the prospects for developing a paying mine here within a very short time are of the most assuring kind. It is to be remembered that ore of a much lower grade can here be worked with profit than about Virginia City or Gold Hill, wood and supplies being cheaper.

NORTH CONSOLIDATED VIRGINIA MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, Room 25, Nevada Block. Geo. Wallace, president; Geo. C. Pratt, secretary; D. H. Jackson, superintendent; Robert Sherwood, Cornelius O'Connor, Geo. R. Wells, Geo. Wallace, Edward C. Platt, trustees. Annual meeting, first Wednesday in February. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 13. Amount, \$100,000. Levied, August 13, 1878. Total assessments, \$520,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine is located directly east of the Ophir and Mexican. The claim is thought to be upon an independent ledge, distinct from the Comstock in many characteristics, but bearing all of its essentials. The work of development from the first has been prosecuted with energy, and since the mine has fallen into the hands of the present management renewed efforts have been made, and will be prosecuted still further, an unlimited amount of capital being at the command of the principal owners of the property. The shaft is now 136 feet below the 1,300-foot level. The rock continues very hard, but the indications are of a highly satisfactory character. There is no increase of water, and all of the machinery works well. So strongly are managers of the mine impressed with its ultimate richness, that they are about putting up the most extensive works on the Comstock. The machinery will be more complete and much more extensive even than that of the Yellow Jacket. Nearly \$200,000 will be used for this purpose, and every improvement that has been devised will be added to the works. The company regard their mine as worthy of thorough working, and to accomplish this end are determined to have none but the most approved machinery.

NORTH OPHIR MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 2, Nevada Block. Robert Barton, president; Butler Burris, secretary; Jno. F. Egan, superintendent; Robert Barton, Robert N. Graves, Jno. Landers, C. W. Kellogg, Daniel Cook, trustees. Annual meeting, 12th August. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine is situated directly east of the Sierra Nevada and Union Con. It was located on 13th September, 1873, and has been actively prospected ever since. At present, they are working through a two-compartment shaft, which has reached about 100 feet in depth; but the company have made arrangements to sink a much larger shaft, and to put up extensive hoisting works. So far, not more than \$3,000 has been expended on the mine, and the company have ample funds in their treasury. There is very little water in the shaft at present, but they will put up powerful pumps to meet any inflow. This mine is located 1,500 feet east of the croppings of the Comstock, and is worked on the theory of there being more than one ledge in that ore belt. The Scorpion company claimed some of the ground belonging to the North Ophir, but having given the latter a deed for the ground, this cause of dispute is settled and disposed of.

NORTH UNION MINING COMPANY.

VIRGINIA, NEVADA.

Office, 305 Pine Street. H. R. Howell, president; H. H. Howell, secretary; S. Burbridge, superintendent; H. R. Howell, H. H. Howell, J. W. Clough, Victor Sessarye, C. A. Herbert, trustees. Annual meeting, 19th of September. No. of shares, 100,000. No. of feet, 1,800. Listed on California Stock Exchange Board.

The property owned by the North Union Company is the old Jacob Little claim, which lies west of the Sierra Nevada and laps down upon the Union Consolidated. The claim was made in early days upon croppings that are regarded as highly favorable in indications. A tunnel was run into Cedar Hill, and from this branch drifts have been run and the vein partially explored. During the execution of this work bodies of ore have been found which assayed up in the hundreds. It has always been considered among mining experts that this would ultimately prove to be a valuable claim; and endorsing this impression, the present company propose, by a liberal outlay of money and energetic work, to demonstrate the worth of the mine at the earliest possible moment. Both, from position and developments already made, the company feel well warranted in prosecuting the work on a larger scale and more thoroughly than ever before.

NORTH UTAH MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; C. S. Curtiss, secretary; A. K. P. Harmon, W. S. Hobart, W. E. Dean, Martin White, C. E. Elliott, trustees. Annual meeting, second Thursday in January. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. Listed on San Francisco Stock and Exchange Board.

NORTHERN KING MILL AND MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA.

Office, Room 31, 318 Pine Street. A. J. Holmes, President; G. F. Glover, secretary; G. A. Woodward, superintendent; A. J. Holmes, J. I. Ayres, G. Holland, W. W. Dodge, Charles Miller, trustees. Annual meeting, 13th February. No. of shares, 100,000. No. of feet, 2,960. Shares per foot, 37 3/16. No. of assessment, 3. Amount, \$10,000. Levied, August 17th, 1878. Total assessments, \$32,500.

This property comprises three separate mining claims, viz: the Northern King, the Wedge, and the Home, the tract covered by these several claims being 2,900 feet long by 600 feet wide, and bounded by the Silver King on the south, the Hercules on the west, the Mayflower on the northwest, the Great Northern on the north, the Wade Hampton on the northeast, and the corner of the Tilden and unoccupied ground on the east.

The present workings consist of Shaft No. 1, 130 feet deep, with levels run 224 feet, in which were found sufficient ore and ledge matter to warrant the construction of a double compartment working shaft. No. 2. This shaft is now being built in a thoroughly workman-like manner, and will be hurried forward with all possible speed, the superintendent being a man noted for his energy and assiduity in the discharge of his official duties. This company is financially strong, and will bring out a mine here, and afterwards work it for all it is worth, in a square and business-like manner, their purposes being of a practical rather than speculative kind.

NORTHERN LIGHT GOLD AND SILVER MINING COMPANY.

PITTSBURG, SHASTA COUNTY, CALIFORNIA.

Office, 419 California Street. J. H. Whitney, president; F. S. Monroe, secretary; Charles D. Dunn, superintendent; J. Lawrence Pool, J. R. Scupham, J. H. Whitney, C. D. Havens, F. S. Monroe, trustees. Annual meeting, first Monday in January. No. of shares, 60,000. No. of feet, 600x1,500. Shares per foot, 40. No. of assessment, 2. Amount, \$15,000. Levied, February 5, 1878. Total assessments, \$24,000. Listed on Pacific Stock Exchange.

The preparations that are now being made for the reduction of the ores from the Copper City mines, near Pitt River, Shasta County, are bringing the individual mines into prominence. The great lode of Copper City may be traced for a little more than two miles, with a bearing north 17 degrees east, and dipping at an angle of about 80 degrees to the west. It lies between slightly metamorphosed slates on the east and a wall of quartzite or porphyry on the west. North of the lode this porphyry is replaced with limestone and the slates come up and meet it. The Northern Light mine occupies about the middle of the lode, and extends from Horse Creek, a fine perennial stream, up along the slope of Bully Hill along a ridge which is itself the ledge at this point harder than either wall, and so more prominent. The mine is crossed near the center of a ditch conveying water from Horse Creek. Just above this ditch a tunnel has been run into the ledge. As the work was done during the Winter the large body of water that permeates the ore caused a slide, which choked up the tunnel, and laid bare the top of a large body of ore or bonanza. The presence of this bonanza is also revealed in a tunnel piercing the ledge some 300 feet further north. This ore body is the one the company will first begin working. The ore assays from \$30 to \$175 in silver, and from \$2.50 to \$190 in gold. It also contains copper, lead and zinc. With a process embracing roasting and leaching the ore can be worked up to 90 per cent. of the precious metals. Wood is abundant, and can be had for about \$2 per cord. The company has a contract with the Extra Mining Company, whose mill is now running for the working of 1,000 tons of the ore.

OAKLAND GOLD MINING COMPANY.

GRASS VALLEY, CALIFORNIA.

Office, Room 1, 240 Montgomery Street. M. Shaw, president; R. D. Hopkins, secretary; M. Shaw, John McLeod, W. Hargrave, A. R. Ford, V. Walters, J. A. Carleton, John Hostrawser, trustees. Annual meeting, second Tuesday in May. No. of shares, 30,000. No. of feet, 1,500. Shares per foot, 20. No. of assessment, 2. Amount, \$1,500. Levied, June 21, 1878. Total assessments, \$4,500.

OCCIDENTAL MINING COMPANY.

SILVER STAR, STORRY COUNTY, NEVADA.

Office, 69 Nevada Block. R. H. Follis, president; Alfred K. Durbrow, secretary; Jas. G. Fair, superintendent; R. H. Follis, Chas. H. Fish, Con. O'Connor, Geo. R. Wells, Geo. Wallace, trustees. Annual meeting, second Monday in August. No. of shares, 40,000. No. of feet, 1,706. Shares per foot, 23½. No. of assessment, 4. Amount, 25c. per share. Levied, February 6, 1877. Total assessments, \$80,000. Listed on San Francisco Stock and Exchange Board.

Whatever may be offered to sustain the "one ledge theory" of the Comstock, two things are certain in regard to the Occidental. It is on an independent fissure vein, and it is so far east that there is little possibility and less probability of its ever being traced far enough down to form a juncture with the great eastern incline of the Comstock. The Occidental is an old location. It has been prospected by two tunnels running north and along the west walls of the ledge. Crosscuts have been run which prove the ledge on each of these adit levels to be of an average width of fifty-two feet. These levels are between 400 and 500 feet apart. They have been connected by a winze, and the continuity of the ledge thus demonstrated. Work was suspended last year, but the site for a permanent shaft has been selected directly over the crosscut from which the winze was run to connect the tunnel levels. Work will, probably, be resumed at an early day. Experts are of the opinion that a moderate increase of depth will uncover valuable ore deposits in this ground. The company is a strong one, and will be likely to go down till they get ore. It is probable that a drift will be run from the Suto Tunnel, to work the lower levels, as the tunnel drains the ledge.

ONTARIO SILVER MINING COMPANY.

UTAH TERRITORY.

Office, 31 Broadway, New York. J. B. Haggin, president and treasurer; R. P. Lounsbury, vice-president; B. B. Minor, secretary; H. B. Parsons, assistant-secretary; R. C. Chambers, superintendent; J. B. Haggin, B. B. Minor, A. E. Davis, W. B. Carr, John C. Ball, W. Willis, R. P. Lounsbury, directors. Stock registered at Union Trust Co. Transfer office, at Wells, Fargo & Co's., 65 Broadway. Listed on New York Stock Exchange (old board).

This company was incorporated under the laws of California on the 16th of December, 1876, with full paid capital stock of \$10,000,000. The mill was completed and commenced operations on the 26th of January, 1877, after which time the stock was put upon the New York market.

The property consists of the "Ontario Mining Claim," 1,500 feet long, by 200 feet wide, and a mill site adjoining on the north, of three acres of land for building and dumping purposes, for both of which we have "United States patents." Also the "Switzerland Mining Claim," 1,500 feet long, by 200 feet wide, adjoining the Ontario on the east. An application for a patent for same has been made, and is now pending.

Upon the patented ground the necessary buildings have been erected, such as a large and commodious boarding house, and sleeping houses for the men employed, store houses, a small saw mill for sawing timbers and the hoisting and pumping works necessary for their large mining operations.

About a mile and a half north of the mine they have 15 acres of land, upon which the mill and the necessary buildings for reducing the ore are erected, consisting of one 40-stamp dry crushing mill, with Stetefeldt furnace for chloridizing base ores, retort and melting room, coal house, lodging houses for the men, boarding house and office, scale houses, barn, etc.

The ore has been worked up to a percentage of 90-8-10 per cent. of its assay value.

From January 26, 1877, when the mill was started, to August 1, 1878, the receipts were \$2,820,783.91; expenses and bullion discount, \$1,113,597.06; net profits, \$1,707,186.85; paid to stockholders, \$1,498,000; cash balance, August 1, 1878, \$209,186.85.

OPHIR SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, 203 Bush Street. C. L. Weller, president; C. L. McCoy, secretary; Wm. Patton, superintendent; C. L. Weller, George Wallace, George R. Wells, A. K. P. Harmon, James H. Dobinson, C. O'Connor, C. K. Fish, trustees. Annual meeting, third Wednesday in December. No. of shares, 100,800. No. of feet, 675. Shares per foot, 149½. No. of assessment, 32. Amount, \$1 per share. Levied, Sept., 10th, 1878. Total assessments, \$2,340,744. No. of dividend, 22. Amount, \$4 per share. Declared, March 7th, 1864. Total dividends, \$1,394,400. Bullion yield, \$10,684,339. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

It is generally conceded that this mine forms a portion of the first location on the great Comstock Lode. Long before the American miners began prospecting in the vicinity, parties of Mexicans were working the croppings on the Ophir ground. Old Comstock, whose name has been immortalized by its connection with this wonderful mineral discovery, located his claim on part of what is now the Ophir ground. A very interesting volume might be written about the Ophir mine. The space at our command only admits of a mere reference to the most salient points in its history. It is situated between the California and Mexican, the Union adjoining the latter on the north. It includes the old Mexican, and was the first to produce bullion. It has been worked with energy ever since its first location in 1859. Its main shaft, of four compartments, is nearly 1,000 feet east of the croppings of the lode. It is sunk to the 1,550-foot level, perpendicular, from where an incline, with a pitch of 37° has been run, extending to the depth of 2,100 feet from the surface. This incline is still being sunk. It was 64 feet below the 2,100-foot level on 7th September, 1878.

Few events in the history of the Comstock mines exhibit the energy and resources of the men who manage them in a clearer light than is presented by the fact that when the great fire that destroyed Virginia City, and with it the works of the Ophir, in October, 1875, the company rebuilt its mill, hoisting works and workshops, and put up new and more powerful machinery than that destroyed, and were ready to resume work on the mine in thirty days! This wonderful achievement incurred an outlay of more than \$300,000. Since the date of our previous report of this mine, in THE MINING REVIEW, an immense amount of work has been done. The north drift on the 1,465-foot level has been extended through the Mexican and Union, and connected with the Sierra Nevada mine, which affords a strong current of air, and materially improves the ventilation of this mine. The north drift, on the 1,600-foot level, has also been extended through the Mexican, Union Consolidated, and into the air chamber of the Sierra Nevada, for purposes of ventilation. In the vertical shaft the old pumps and pumping

ORIGINAL GOLD HILL GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 14, 309 California street. James R. Lee, president; W. H. Hellman, secretary; J. H. Maynard, James R. Lee, Peter Mulloy, Geo. D. Roberts, Geo. P. Thurston, trustees. Annual meeting, May 7th. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33 $\frac{1}{3}$. No. of assessment, 7. Levied September 23d, 1878. Total assessments, \$111,500.

The Original Gold Hill mine adjoins the Crown Point Ravine mine on the north, both being on the same ledge, running parallel with the western portion of the Comstock lode. It lies contiguous to the Exchequer, Bullion, Consolidated Imperial and Alpha mines, and but a short distance from the Gold Hill branch of the Sutro tunnel. The ledge in the original Gold Hill mine, at the 300-foot level, is from 80 to 100 feet wide, well defined, with a strata of milling ore of considerable width, which, with improved facilities for extraction, can be made to pay well under the stamps. The ore vein shows continued improvement as depth has been attained. The mine is supplied with good hoisting machinery. The depth of the shaft at present writing (October 24, 1878,) is 450 feet. At the 300-foot station a cross-cut was run through the ledge, which was found to be about 100 feet in width, and well defined. About 40 feet of the ledge at this point is good milling ore, that will yield not less than \$40 per ton. Work is about to be resumed by the new management. An assessment of 20 cents per share has recently been levied for this purpose, and to pay off the present indebtedness, which is light. Sinking is to be immediately commenced and vigorously prosecuted until a depth of 700 feet has been reached, when a station will be cut out and a cross-cut run through the vein. It is confidently believed that at the 700-foot level the vein will be still wider, and the ore of a much higher grade than that already developed on the 300-foot level. The company is negotiating with the Sutro Tunnel Company to explore their mine by means of a west drift from the south branch of the tunnel when it shall have been completed to a point opposite the mine. This drift will intersect the mine at a depth of 1700 feet below the surface. Under the present intelligent, enterprising and vigorous management, we look forward with confidence to important developments in the not distant future in the grounds of the Original Gold Hill and the Crown Point Ravine mines.

15th, 1877, and is the oldest location in the vicinity. The shaft is about 100 feet in depth, and shows a vein three feet wide, which assays well in gold and silver. Several stringers of quartz are cut by the shaft, which give good results in gold. At the depth of 25 feet the shaft cut a vein of quartz 18 inches in width, dipping east. These veins are stringers from the main Orient ledge.

ORIENTAL CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 540 California Street. R. B. Milroy, president; F. C. Mosebach, secretary; C. S. Benham, superintendent; R. B. Milroy, S. P. Warren, Edwin Merrifield, Wm. Milroy, F. C. Mosebach, trustees. Annual meeting, January 22d. No. of shares, 50,000. No. of feet, 1,600, U. S. patent. Listed on San Francisco Stock and Exchange Board.

This mine is situated about one mile from Alleghany City, Sierra County, California. The vein, which carries and is being worked for both gold and silver, is encased in slate, has an easterly and westerly strike, and a northerly dip of about 45 degrees. It has been attached by a tunnel, which, 500 feet in, strikes the lode at a depth of 130 feet. The ore chute, which has a length of 250 feet, has been worked out above the tunnel level. Below the tunnel an incline has been put down on the vein to a depth of 50 feet, showing good ore all the way. The pay portion of the vein averages two feet in width, though in places it expands into a white quartz, which heretofore has been rejected as worthless. More recently this has been found to contain \$40 per ton in silver with \$4.50 in gold, which will lead to the ore being hereafter worked for both these metals. The most of the ore milled has paid at the rate of \$23 per ton, parcels from the lower level having gone much higher, bringing the entire average up to \$42. There is

a good 8-stamp steam mill, situate at the mouth of the tunnel, and having capacity to reduce from 15 to 20 tons of ore per day. The mine is also supplied with hoisting works, pumps, etc. The Oriental has been worked since 1863, since which time it has produced a total of \$210,116. As the expenses attending this production have been scarcely half that amount, a handsome profit would have accrued to the owners but for legal complications and bad management. As these troubles are disposed of, the mine being now held under a United States patent, and the whole estate having passed into the hands of capable and reliable parties, it promises to enter upon a career of marked and prolonged success. Under the new directory, 20,000 shares of stock having been set aside and sold for working capital, the exchequer of the company is well supplied with funds, relieving shareholders of apprehensions of future assessments. The mine and mill has been put in first-class order throughout, and the work of exploration and production will henceforth be pushed with energy, and no doubt with results satisfactory to the shareholders and all concerned.

Since the above was written, another rich strike has been made in this mine, in the east drift on the 350-foot level, and being some distance from the locality of the previous finds, shows the ore-belt here to be very broad as well as prolific.

ORIGINAL KEYSTONE SILVER MINING COMPANY.

VIRGINIA MINING DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 25, Nevada Block. Joseph E. Smiley, president; Geo. C. Pratt, secretary; L. M. Pearlman, superintendent; J. Greenbaum, J. M. Walker, J. L. King, Ed. Hall, trustees. Annual meeting, first Tuesday in August. No. of shares, 100,000.

The property of the company consists of 1,800 linear feet on the ledge by 600 feet in width. It was located November 19th, 1859, and is among the first claims taken up on the Comstock. The company was incorporated August 7th, 1877. The Keystone is in a direct northerly and southerly course with the great bonanza mines:

CONSOLIDATED VIRGINIA.	CALIFORNIA.	OPHIR.	MEXICAN.	UNION CONSOLIDATED.	SIERRA NEVADA.	UTAH.	ORIGINAL KEYSTONE.
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And less than five years ago the outlook of these mines was no better than the present prospects of the Keystone. When the mine is fully opened there is every reason to believe its shares will command as high a price as any on the lode. The improvements consist of: Shaft No. 1, 30 feet deep, on the north line of the claim, some 200 feet south; Tunnel No. 1 has been driven into the hill-side 60 feet—here, also, Shaft No. 2 has been sunk to the depth of 46 feet; at about the center of the claim, or 700 feet south of Tunnel No. 1, Tunnel No. 2 has been put in 170 feet; still further south, and within 300 feet of the south line, and about the same distance from the toll-house on Geiger's Grade, Shaft No. 3 (an incline shaft) has been sunk some 100 feet.

In nearly all the above openings, quartz giving good assays in gold and silver has been found, thus demonstrating, beyond a doubt, that the lode passes through the entire length of the company's property. Later in June, 1876, the main working shaft, known as the Pearlman shaft, was commenced, with a view to deep development. A large and substantial building has been erected over it. At the present time this shaft is about fifty feet deep. The location of the Pearlman shaft has been selected with great judgment, a little north of the center of the claim, with a view to the erection of extensive works, such as will secure unlimited dumping privileges, ore houses, etc.

The report of Mr. William T. Robinson, mining engineer, shows the ledge of the Keystone to be encased between two well-defined walls; also, between the syenite or diorite on the west, and the porphyritic rock, or, as the miners term it, bird's-eye porphyry, on the east, with occasional trachytic green-stone porphyritic dikes. Indications of ore bodies present themselves at a depth of 100 feet. And, in conclusion, he remarks that an examination of the company's property, confirms his high opinion of this portion of the Comstock lode. The superintendent's report shows the judicious expenditure of \$18,000 gold coin, and confirms Mr. Robinson's theory of the ore formation. It is confidently expected that the shaft will penetrate the ore body at a depth of 500 feet. The board of directors have set aside 15,000 shares as working capital, the sale of which will furnish an amount sufficient to thoroughly prospect the mine. On the 25th of July, 1878, a new shaft, consisting of three compartments, was started, size 4½ by 4½ for hoisting, 5 by 5 for pumping, in the clear, 14 feet long; size of shaft, have, since break-

ing ground, sunk 12 feet to date, and the work of sinking and timbering is being pushed ahead with due speed. Work carried on the mine day and night. Ground works well. Expect to have machinery on hand and ready for work inside 30 days.

ORLEANS GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, W. E. Thornburgh, John Skae, Joseph Clark, W. E. Dean, trustees. Annual meeting, second Tuesday in January. No. of shares, 48,000. No. of feet, 2,000. Shares per foot, 24.

The Orleans is the old Van Bokkelen & Thornburgh, and lies north of the western end of the Utah and the Sutro. The location is on the west ledge, the character of which is well known, and which has always been found to carry precious metals.

ORO BLANCO MINING COMPANY.

ORO BLANCO, PIMA COUNTY, ARIZONA TERRITORY.

Office, Room 20, Safe Deposit Building. Geo. W. Dietzler, president; W. O. Gould, secretary; J. P. Preston; superintendent; Geo. W. Dietzler, A. G. Hawes, E. Moreau, Z. E. Brittan, W. O. Gould, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of feet, 1,500.

OVERMAN SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, 414 California Street. Geo. W. Beaver, president; Geo. D. Edwards, secretary; Chas. Forman, superintendent; Geo. W. Beaver, Richd. Wegener, R. F. Morrow, Jos. Clark, S. Heydenfeldt, trustees. Annual meeting, second Thursday in July. No. of shares, 33,400. No. of feet, 1,200. Shares per foot, 32. No. of assessment, 42. Amount, \$3 per share. Levied, September 6, 1875. Total assessments, \$2,951,600. Bullion yield, \$1,581,487.11. Listed on San Francisco Stock and Exchange Board.

The Overman lies immediately south of, and adjoining the Belcher. In its early days an abundance of rich ore was taken from the west ledge. It was then prospected through the shafts of the Uncle Sam, and Mary Ann, besides its own, those localities being now comprised within its boundaries. Subsequently a site for a new shaft was selected in the center of the claim, and 1,500 feet to the east from the old workings. Admirably arranged hoisting works have been erected, with the full complement of attachments, in lieu of shops, etc. A large ore-house has been erected, and a side-track laid from the Virginia and Truckee Railroad thereto, over which ore is shipped daily for milling purposes, and supplies received. The Overman has recently come again to the front as a bullion producer. The prospecting on the 1,500 and 1,600-foot levels has been very promising. The vein is very strong, and the prospects are very favorable.

PACIFIC MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 6, 318 Pine Street. Edward F. Stone, president; J. W. Clarke, secretary; Charles Forman, superintendent; E. F. Stone, J. M. Walker, W. F. Myers, W. S. Lyle, R. M. Graves, trustees. Annual meeting, fourth Thursday in January. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, 83. No. of assessment, 1. Total assessments, \$20,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The ground of the Pacific lies north of the claim of the Rock Island, and the development of the mine has been carried on through the Rock Island shaft.

PANTHER MINING COMPANY.

CORNUCOPIA, ELKO COUNTY, NEVADA.

Office, 310 Pine Street. C. J. Shaw, president; J. W. Pew, secretary; J. M. Wilson, superintendent; C. J. Shaw, M. J. Hussey, A. C. Taylor, L. Vesaria, C. B. Gould, trustees. Annual meeting, third Tuesday in April. No. of shares, 50,000. No. of feet, 1,500. No. of assessment, 9. Amount, 10 cents. Levied, Sept. 12, 1878. Total assessments, \$75,000. Bullion yield, \$21,720.45. Listed on San Francisco Stock and Exchange Board.

The Panther mine is located east and adjoining the Hussey mine. During the past year new hoisting works have been erected and considerable dead work done. The main shaft has been sunk to a depth of 360 feet, and a crosscut run to the main ledge. Drifts are now being run east and west, following the ledge, which is seven feet wide. Stringers of ore have been met with, carrying mineral, from which good assays have been had. The management hope to find the same chute of ore at this depth as was found on the upper level. Work is being vigorously pushed ahead at the present time. Total bullion product since incorporation, \$21,720.45.

PARADISE VALLEY MINING COMPANY.

MOUNT ROSE, NEVADA.

Office, Room 13, Safe Deposit Building. S. Linkton, president; W. Letts Oliver, secretary; P. S. Van Rensselaer, H. Janin, S. F. Gashwiler, L. W. Greenwell, Samuel Linkton, trustees. No. of shares, 100,000. No. of feet, 8,000. Shares per foot, 33. Listed on San Francisco Stock and Exchange Board.

The Paradise mines are situate in the mountain range lying to the east of Paradise Valley, one of the most extensive and fertile farming districts in the State of Nevada. They were discovered only about two years ago, and, although the claim-owners have received but little outside aid, many properties of unmistakable value have already been developed here, the mine of the Paradise Valley Company being one of the number. The lode, strong and well defined, strikes square across the face of the mountain, which, being very steep, affords good facilities for opening the mine by means of drifts run in on the vein. These drifts, without

being extended very far, will open backs to a height of 800 feet. The company, besides pushing the work of exploration vigorously, are putting up shops, houses for workmen, etc.; it being their intention to outfit and explore the property in a style commensurate with its great apparent value. This is not a mere prospect, but already a productive mine—the lode carrying a pay streak four and a half feet in thickness, that assays from \$200 to \$300 per ton. The lodes in this district are mostly of large size, and occupy regular fissures between porphyry and granite. The ores consist mainly of the black sulphuret variety, and carry both gold and silver. They are very tractable, and can be reduced cheaply, the district being fairly supplied with wood and water, and farm produce of all kinds being extremely cheap.

PAUPER MINING COMPANY.

OWHYEE COUNTY, IDAHO.

Office, 106 Leidesdorff Street. O. H. Bogart, president; J. H. Conway, secretary; J. I. Crutcher, superintendent; D. L. McDonald, A. P. Minear, O. H. Bogart, J. H. Conway, J. M. Bogart, trustees. Annual meeting, third Thursday in July. No. of shares, 50,000. No. of feet, 1,600. No. of assessment, 7. Levied, February 26, 1876. Total assessments, \$67,000.

PEABODY CONSOLIDATED MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 308 Pine Street. H. R. Howell, president; H. H. Howell, secretary; S. Burbridge, superintendent; H. R. Howell, H. H. Howell, N. K. Lamson, — Plnkerton, S. Gulliner, trustees. Annual meeting, 26th of September. No. of shares, 100,000. No. of feet, 3,000.

The Peabody Consolidated contains 3,000 feet, located near the north end of the Comstock, in close proximity to the bonanza developments, and lies about 1,800 feet easterly of the California, Con. Virginia, Best & Belcher and the Gould & Curry. The claim consists of the Peabody ground and the Garrison location, 1,500 feet each. There is a three-compartment shaft near the line of the Garrison, which was begun in 1874, and has been sunk about 100 feet, with a good showing of porphyry and clay, and some seams of excellent ore. Work will be prosecuted vigorously.

PEYTONA GOLD AND SILVER MINING COMPANY.

CEDAR HILL, VIRGINIA, NEVADA.

Office, Room 15, 310 Pine Street. Ferd. Vassault, president; J. W. Pew, secretary; M. A. McDonald, superintendent; M. J. McDonald, Louis Vesaria, M. J. Hussey, Ferd. Vassault, J. B. Warren, trustees. Annual meeting, last Monday in February. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 14. Levied, March, 1876. Total assessments, \$97,000. Listed on San Francisco Stock and Exchange Board.

The Peytona was located November 21st, 1859, as an extension of the Sierra Nevada, prior to the Allen or Utah companies. It is proposed to consolidate with the Allen Consolidated Company, which is immediately adjoining on the east. The Peytona has several tunnels driven into the hill; one, at a depth of 300 feet below the croppings, is advanced nearly 1,100 feet, having encountered in its progress several small seams of ore. The upper tunnels, varying from 300 to 100 feet, have found good ore at intervals, with a solid ledge of over 60 feet in width.

PHIL SHERIDAN MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 12, Cosmopolitan Hotel. C. L. Weller, president; D. L. Thomas, secretary; S. L. Jones, superintendent; C. L. Weller, M. K. Landon, George Townsend, Aaron Doud, C. P. Jones, trustees. Annual meeting, fourth Monday in July. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, 12. No. of assessment, 7. Amount, 50c. per share. Levied, April 16, 1877. Total assessments, \$86,375. Listed on San Francisco Stock and Exchange Board.

PINKHAM MINING COMPANY.

IIARRISBURG MINING DISTRICT.

Office, 310 Pine Street. O. Y. Giffin, president; George R. Spinney, secretary; H. S. Lubbock, superintendent; O. Y. Giffin, J. H. Wise, W. H. Graves, W. M. Lubbock, R. N. Graves, trustees. Annual meeting, third Thursday in April. No. of shares, 60,000. No. of feet, 1,000. Shares per foot, 60.

PIONEER CONSOLIDATED MINING COMPANY.

EUREKA, NEVADA.

Office, Room 4, 309 California Street. R. Sherwood, president; J. M. Buffington, secretary; E. J. Elzy, superintendent; Robert Sherwood, J. A. Albertson, M. McDonald, J. D. Fry, C. D. Elliot, trustees. Annual meeting, third Monday in May. No. of shares, 50,000. No. of feet, 1,000.

PITTSBURG GOLD MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, 414 California Street. Julius Bandmann, president; R. Wegener, secretary; Julius Bandmann, J. H. Landsberger, H. Heynemann, H. Fisher, T. C. Lampe, trustees. Annual meeting, third Saturday in September. No. of shares, 100,000. No. of assessment, 2. Amount, 6c. per share. Levied, May 20, 1878. Total assessments, \$12,000.

This mine is situated between the Sierra Nevada and the old Sacramento and Meredith. It was located in 1861, and explored through a tunnel in Cedar Hill, of 540 feet in length. Nearly 400 feet of this tunnel was run through materials that paid for mining and milling. Finding the tunnel unsuited for their operations, the company concluded to sink their present shaft, which is nearly 300 feet below the mouth of the tunnel. A drift from this shaft run at 100 feet from the surface, reached the ledge at 60 feet, and struck ore that yielded seven dollars

per ton in gold. Since then the company have erected suitable machinery for a thorough prospecting of their ground. Their shaft is down 400 feet and a crosscut that was within 30 feet of the ledge on the 25th of September, 1878. Their machinery is valued at \$10,000.

PLACERVILLE GOLD QUARTZ MINING COMPANY, LIMITED.

LONDON CORPORATION.

General Manager in California, Thomas Price, 524 Sacramento Street.

PLEIADES GOLD AND SILVER MINING COMPANY.

WARD MININO DISTRICT, NEVADA.

Office, Room 13, Safe Deposit Building. J. J. Dunne, president; W. Letts Oliver, secretary; T. J. Bell, superintendent; E. A. Sawyer, W. P. Willard, T. B. Ludlum, T. J. Bell, J. J. Dunne, trustees. Annual meeting, first Tuesday in April. No. of shares, 100,000. No. of assessment, 1. Amount, 5c. per share. Levied, April 11, 1878. Listed on San Francisco Stock and Exchange Board.

This mine is adjoining the Martin White, one of the most valuable properties in Eastern Nevada. A vertical shaft is being sunk on the claim. While work on this shaft, which is already down 150 feet, will be continued, current expenditures will be confined within a narrow compass, the management being unwilling to burden the shareholders with frequent or heavy assessments. A body of rich ore has already been developed in the mine, which occupies a true and well-defined fissure, being the same as that on which the Martiu White is situated.

PLIOCENE GOLD MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. R. E. Brewster, president; E. S. Thurston, superintendent; R. E. Brewster, G. Palache, E. Green, J. L. E. Kelly, Geo. P. Thurston, trustees. Annual meeting, May 4th. No. of shares, 60,000. No. of assessment, 8. Levied, July 2, 1878. Total assessments, \$40,000.

PRICE AND DAVIES MINING COMPANY.

EUREKA, NEVADA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edwd. F. Stone, secretary; C. Gurnee, Geo. W. Hopkins, J. H. H. Williams, N. G. Andrews, E. F. Stone, trustees. No. of shares, 100,000. No. of feet, 6,000.

The great ledge at Eureka, Nevada, is next to the Comstock in its production of the precious metals. The ore-bearing formation, between quartzite and shale, extends for a long distance, and has carried ore wherever prospected. The above claim covers the width of the croppings, and adjoins the Albion on the north. The Price and Davies, Albion, Richmond, Eureka Consolidated, K. K., Phoenix, and Jackson, being the mines on the dominant lode of the district, taken in their order, running southeasterly. The entire extent of mining ground belonging to this company is now being actively prospected, the contract for sinking a working shaft having been let, and the working of the mine progressing under the direction of experienced miners.

PRINCESS SILVER MINING COMPANY.

BULL RUN, ELKO, NEVADA.

Office, 302 Montgomery Street. Joseph Brandenstein, president; Geo. P. J. Watson, secretary; Joel E. Meacham, superintendent; Joseph Brandenstein, John A. Rice, Isaac S. Gartner, Joel E. Meacham, Gustave Sutro, trustees. Annual meeting, first Saturday in December. No. of Shares, 100,000. No. of feet, 1,500.

PROSPECT GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, 320 Sansome Street. F. A. Benjamin, president; Warner Craig, secretary; William Lee, superintendent; F. A. Benjamin, Benj. Flint, S. Bennett, G. W. Prescott, S. M. Smith, Geo. F. Sharp, P. N. Lilienthal, Jonathan, Kittredge, trustees.

QUINTERO MINING COMPANY.

PHILADELPHIA, NEVADA.

Office, Room 12, Cosmopolitan Hotel. J. D. Fry, president; D. L. Thomas, acting secretary; J. D. Fry, A. K. P. Harmon, Robert Sherwood, D. D. Colton, H. C. Kibbe, trustees. Annual meeting, third Monday in December. No. of shares, 50,000. No. of feet, 2,000. Shares per foot, 25. No. of assessment, 3. Amount, \$5,000. Levied, September 30, 1874. Total assessments, \$15,000.

RAYMOND & ELY MINING COMPANY.

PIOCHE, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. M. L. McDonald, president; J. W. Pew, secretary; H. H. Day, superintendent; M. L. McDonald, M. J. McDonald, T. C. Banks, Delos Lake, C. Stevens, trustees. Annual meeting, fourth Tuesday in January. No. of shares, 30,000. No. of feet, 5,000. Shares per foot, 6. No. of assessment, 8. Amount, \$1 per share. Levied, August 6, 1878. Total assessments, \$590,000. No. of dividend, 23. Declared, September 6, 1873. Total dividends, \$3,075,000. Bullion yield, \$13,400,000. Listed on San Francisco Stock and Exchange Board.

The Raymond & Ely was the first mine to attract wide attention through its large and profitable bullion production in Eastern Nevada. It has also, from the very first, been distinguished for an economical and otherwise excellent management. The earlier records of this property contain some of the best chapters in our mining annals, and fairly offset the reverses that latterly, through the exhaustion of its first great ore-find, have clouded its history. It is one of the few mines on the Coast that has paid dividends largely in excess of assessments, as appears by the above tabulated statement of facts. For several years preceding, and including the year 1875, a great prosperity attended the Raymond & Ely, which, since the last mentioned

date, has been yielding no net revenues to the company, though the ore extracted and milled has gone far toward defraying the heavy current expenses entailed, through an uninterrupted prosecution of exploratory work in the interim. The most prolific part of the lode has been that between the 800 and 900-foot levels, where a body of good ore 400 feet in length was struck and afterwards removed and milled. The mine has now been prospected to a depth of over 1,300 feet. In extending the 1,200-foot level the past year, what is known as the Black Ledge was intersected, which was afterwards stripped for a distance of 100 feet, and found to be 30 feet in width from the bottom of a winze sunk alongside this ledge to a depth of 120 feet. Ore was obtained that assayed from \$26.50 to \$35 to the ton, and it is confidently believed that this will prove one of the most important strikes ever made in the mine. The company has lately, at an expense of \$32,000, procured and put in place a Burleigh machine drill, with compressor and other appurtenances, and through the aid of which further deep exploration will be greatly expedited and cheapened. With the hoisting and pumping machinery on hand sinking can be carried on to the 2,000-foot level. The estate of this company includes the Burke and the Creole mines, their property being outfitted with first-class steam hoisting works and two large and well appointed ore reduction mills, one of them carrying 20 stamps, located at the mine, and the other carrying 30 stamps, located at Bullionville, which place is connected with their ore dump by railroad. These mills have been kept running either on ore from the Raymond & Ely or from other mines in the neighborhood, the prospect now being that the company will be able, in a short time, to keep them fully employed on ore from their own mine. The mining public await with interest and will greet with pleasure the return of this old favorite to its former fairly earned and well-sustained dividend-paying status.

REAL DEL MONTE MINING COMPANY.

ESMERALDA MINING DISTRICT.

Office, 304 California Street. H. M. Yerrington, president; A. Baird, secretary; George Daly, superintendent; A. J. Ralston, R. N. Graves, N. K. Masten, Daniel Cook, H. M. Yerrington, trustees. Annual meeting, third Tuesday in October. No. of shares, 50,000. No. of feet, 1,000. Shares per foot, 50. No. of (last) assessment, 3. Amount, \$1. Levied, May 22, 1878. Total assessments, \$50,000.

The new Real del Monte, located in Esmeralda District, Nevada, is formed by the union of portions of the Juniata, and Last Chance grounds, all of which were held under a U. S. patent. The ground thus consolidated comprises 1,000 feet, and is very favorably located. The company was incorporated October 15, 1877, and proposes to work a deep shaft and develop all of the adjacent ground comprised in the claim. The indications are very encouraging, and the principal owners of the property are possessed of capital ample for all purposes of development. There is a first-class three-compartment shaft, two 4x6, for hoisting and one, 4x5 for pump. The engine is of capacity for sinking the shaft 1,500 feet. The shaft passes through a six foot body of ore that assays well. The formation is porphyritic and quite compact. Great interest is taken in the progress of work on the mine, as from the elaborate plans prepared it is evident that Last Chance Hill will be thoroughly explored, and upon the result of this enterprise depends, in a great measure, the renewal of operations on other claims in the vicinity that are now idle. If there is any virtue in an abundance of capital, and energy to back it, we may look for energetic work on this mine.

1877-78-79-80

RED CLOUD CONSOLIDATED MINING COMPANY.

BODIE, BODIE COUNTY, CALIFORNIA.

Office, Room 58, Nevada Block. Geo. C. Wickman, president; Joel T. Lightner, secretary; S. W. Blasdel, superintendent; H. C. Blasdel, Chas. H. Fish, Annis Merrill, Wm. H. Osgood, Geo. C. Wickware, trustees. Annual meeting, second Wednesday in October. No. of shares, 50,000. No. of feet, 1,500. Shares per foot, 33 $\frac{1}{3}$. No. of assessment, 2. Amount, 30c. Levied, July 23, 1878. Total assessments, \$30,000. Bullion yield, \$1,927.50.

This mine is located near and on the same line as the Bodie and Standard, and belongs to the same group of mines. It is worked by a two-compartment shaft, which is 400 feet deep at present. Owing to the quantity of water in the lower depths, the company are preparing to erect suitable pumps and machinery to obviate this difficulty. Till this machinery is ready, they are crosscutting at the 250-foot level, and find promising indications of the ledge.

RED CROSS CONSOLIDATED GOLD AND SILVER MINING COMPANY.

VIROINIA, STOREY COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Annual meeting, first Monday in September. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. No. of shares, 100,000. No. of feet, 1,300. Shares per foot, 76.

The Red Cross Consolidated is located on and along a line of croppings parallel with the Comstock, and which runs through the Mint and Senator. The claim lies directly east of the Gould & Curry and Best & Belcher. The work of prospecting has been but recently commenced, but great expectations are entertained as to the result when sufficient depth has been attained. A permanent three-compartment shaft is being sunk in connection with the White Cross Consolidated, the expense being borne equally by each company. This shaft is being pushed down energetically.

RED JACKET CONSOLIDATED MINING COMPANY.

DEVIL'S GATE MINING DISTRICT, NEVADA.

Office, Room 12, Cosmopolitan Hotel. A. D. Snedeke, president; D. L. Thomas, secretary; James Blackburn, superintendent; D. L. Thomas, John Crockett, Phillip Hinckle, H. O. Reinhardt, A. D. Snedeke, trustees. Annual meeting, first Monday in November. No. of shares, 100,000. No. of feet, 2,250. Shares per foot, 43.

This mine lies on the track of the Comstock as it extends in a northerly direction from the Sierra Nevada. It is an early location, and has been opened by a vertical shaft put down 250 feet. From the bottom of this shaft a drift has been run 80 feet, and a crosscut extended thence north 25 feet. This crosscut is in good ore, very similar to that found in the Justice mine. The Red Jacket is considered a valuable piece of ground, and under the stimulus imparted to operations on this section of the Comstock belt through the late ore-find in the Sierra Nevada, Union Consolidated and other claims in the vicinity, there is little doubt but shares in this mine will appreciate rapidly.

RELIEF CONSOLIDATED MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; Wm. M. Stewart, Wm. F. Herrin, P. Van Clief, W. J. Hutchings, W. W. Foote, trustees. Annual meeting, first Friday in October. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

The Relief Con. is one of the oldest locations in Bodie District; its north line being 200 feet from the Bodie proper, or Mono; south line running south 1,500 feet, with a well-defined lead, of from seven to eight feet wide. To the west, and running parallel with Relief, is the Blue Belle, also 1,500 feet; this has been consolidated with Relief, making 3,000 feet in the incorporation, with only 60,000 shares. The company have been timbering the shaft until recently, and now sinking goes on again. The shaft is now 90 feet deep, carrying quartz and ledge matter all the way down and across the ledge. The company, feeling confident of its being a paying mine in a short time, have had the ground surveyed by the United States Surveyor, and have already applied for a patent. This is one of the claims in the district that crop out and have a ledge at the surface. There is no question as to its title, the location having been made prior to any other in the vicinity. On the whole, it is believed that the property is second to none in the district.

REMINGTON GRAVEL MINING COMPANY.

YANKEE HILL, TUOLUMNE COUNTY, CALIFORNIA.

Office, Room 80, Nevada Block. J. H. Freeman, president; Daniel Buck, secretary; Jas. Barron, superintendent; J. H. Freeman, C. W. Smith, James Hillman, S. N. Roberts, Wm. Kerr, trustees. Annual meeting, second Wednesday in June. No. of shares, 20,000.

REPUBLIC CONSOLIDATED MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; John F. Miller, Wm. M. Stewart, Wm. F. Herrin, P. Van Clief, W. W. Foote, trustees. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

REX MONTIS MINING COMPANY.

KEARSARGE, INYO COUNTY, CALIFORNIA.

Office, 18 Nevada Block. Geo. C. Potter, president; D. Henshaw Ward, secretary; Cook Talcott, superintendent; Geo. C. Potter, D. Henshaw Ward, Thos. J. P. Lacy, Joseph W. Ward, Cook Talcott, trustees. Annual meeting, first Monday in August. No. of shares, 3,200. No. of feet, 1,800. No. of assessment, 10. Total assessments, \$58,736. Bullion yield, \$63,000.

The Rex Montis mines, situated on the northerly side of the Kearsarge Mountain, in Inyo County, State of California, consist of a series of gold and silver ore-bearing veins called the Rex Montis, Boomerang, Arctic and Potosi Nos. 7 and 8. The corporation was formed in August, 1876, with 3,200 shares of \$100 each, and the first ore was taken out in September of that year. The present workings were located at an altitude of 12,500 feet, for the purpose of demonstrating the value of the property, which is being done by a series of tunnels driven into the side of the mountain, one below the other. It has always been the intention, when the value of the property should be demonstrated, to develop the mine by driving tunnels at a lower depth, which can be done, without sinking shafts, to a point 3,000 feet lower than where work is now going on. By this manner of development no pumping nor hoisting machinery will be required, as the ore will be taken from the tunnels, which will afford ventilation and drainage.

Up to August 1, 1878, about \$140,000 had been expended on the property and in the business, of which about \$63,000 had been furnished by bullion, \$58,000 by assessments, and the balance represented the indebtedness of the company. This amount of \$140,000 includes the cost of purchase of the property and of a 10-stamp mill. But little has been done on Boomerang or Arctic, and nothing on Potosi Nos. 7 and 8. Up to the present time, four tunnels have entered the mountain on the Rex Montis claim, running southerly; the highest, No. 1, has been driven only 30 feet and is in ore. No. 2, 178 feet, from which considerable ore has been taken, yielding on an average, by milling, \$120 per ton; and No. 3, 380 feet, from which most of the ore has been taken, averaging about the same value. In No. 3, 77 feet from the face, a winze has been sunk 119 feet, most of the way in rich ore; and Tunnel No. 4 has been driven from

the face of the mountain 306 feet, and connected therewith, furnishing good ventilation and drainage. This tunnel is being continued southerly from the winze and is in ore. The ledge is here 8 feet wide, between regular walls of granite formation, and is below the point of disturbance. Against the hanging wall lies a thick seam of yellow clay. In the tunnels above the vein was narrow but very rich, but pinched in and widened out, showing the ledge to have been broken and disturbed; but in Tunnel No. 4 the walls are regular, and the presence of the clay indicates permanency. The company now propose to drive Tunnel No. 5, below No. 4, and so located as to cut all the veins mentioned above. The ore in Nos. 1, 2 and 3 was milled by wet crushing to a percentage of 80 of the pulp assay, but below No. 3 it has somewhat changed in character, containing antimony and galena, and requiring a furnace for chloridizing. This furnace and appurtenances will be set up in the Spring.

This district, and particularly the Kearsarge Mountain, was known in early days to be very rich in minerals, and, in 1860, was examined by experts, who, however, reported against the advisability of working it at that time on account of its inaccessibility, both from its distance from San Francisco and from its altitude. Since then, however, the construction of railroads have, to a certain extent, overcome the distance from the coast, and it is expected that within a reasonable time there will be communication by rail that will entirely supersede the necessity for teaming. A tramway, to be worked by gravitation, will bring the ore from the mine to a point two miles of the mill, from whence a good wagon-road will be constructed, so that the ore can be delivered at the mill at an expense of not over \$2.50 per ton. Considering the fact that the mines, in consequence of their situation, can be worked by a series of tunnels, furnishing ventilation and drainage for a depth of at least 3,000 feet without sinking a shaft, and thereby doing away with the cost of expensive hoisting and pumping machinery, it will be seen that, while a tramway will be needed to transport the ores, the location has great advantages.

The Independence Tunnel Company are driving a tunnel which will cut all these veins at a depth of some 2,000 feet, and while developing other veins, is of great importance and value to the Rex Montis property. It has been from the first the intention of the principal owners of the Rex Montis mines, in view of the many failures of mining enterprises, to proceed carefully and to get as nearly as possible their expenses within the receipts of bullion—or, in other words, to make the enterprise pay for itself. Although this has not been accomplished in full, yet enough has been done to demonstrate that the property is a valuable one, consisting of ledges of true fissure veins in a regular and permanent formation, and that the judicious expenditure of capital in driving tunnels at a lower depth will develop deposits of rich ore that will pay very largely.

The corporation was started with a capital stock of 3,200 shares, with a view to test, before offering any stock for sale, the permanent value of the property, and as the developments that have been made demonstrate the permanency and richness of the mine, it is probable that to supply the capital necessary to drive additional tunnels, the stock will be increased to 100,000 shares, and that 36,000 shares will be sold for working capital to prosecute the work.

RICHER MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 17, 419 California Street. M. S. Wadsworth, president; W. S. C. Allen, secretary; F. Warukce, superintendent; M. S. Wadsworth, F. Warukce, D. E. Coughaour, J. A. Lytle, W. E. Bridge, trustees. Annual meeting, 8th April. No. of shares, 50,000. No. of assessment, 1. Amount, 50c. Levied, August 28th, 1878. Total assessments, \$25,000.

This company is composed of some experienced men, with means to carry out a substantial system of exploration. This discovery gives promise of developing into a regular "Mother Vein" mine; and we predict for the Richer a regular dividend-paying mine in the near future.

ROCK ISLAND GOLD AND SILVER MINING COMPANY.

GOLD HILL DISTRICT, NEVADA.

Office, Room 6, 318 Pine Street. M. D. Howell, president; J. W. Clark, secretary; Chas. Forman, superintendent; M. D. Howell, W. F. Myers, E. P. Stone, J. B. McGee, J. M. Walker, trustees. Annual meeting, third Tuesday in July. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, 83¢. No. of assessment, 13. Amount, 20c. per share. Levied, January 9, 1878. Total assessments, \$328,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Rock Island is on American Flat, south and west of the Baltimore Consolidated. The main ledge lies west of the hoisting works, and crops to the surface in a long range, presenting indications which attracted the immediate attention of the prospectors of early days. The claim was located in 1859, and partially prospected soon after, according to the custom of the men of that period. This, however, amounted to little more than a scratching among the roots of the sage-brush, for surface ore. Subsequently a tunnel was sent into the western range, and the ledge cut. The prospect was so good that it was at once determined to organize for more extended and systematic work. Since then a permanent site for hoisting works, and the shaft, has been selected, buildings large and convenient erected, machinery of approved pattern and great power set up, and a shaft sunk 900 feet. From the 450-foot level, a drift was run to the ledge. It was found to be 270 feet in width, and filled with most promising vein matter, but carrying no pay ore. The prospecting was continued on the 650 and 850-foot levels, with much better promise of success. The ledge was intersected in the shaft between the levels, and there found to contain quartz and low-grade ore in abundance. The south drift, on the

650-foot level, exposed a fine-looking seam of quartz ready for crosscutting, while the drift west, on the 850-foot level, was continued 250 feet in a similar formation, without reaching the west wall of the ledge. The east wall is known from the dip of the ledge to be 130 feet east of the shaft, so that the ledge is not less than 400 feet wide on the 850-foot level. Such formations are never barren. The vein is filled with the true Comstock matrix, and it is only a question of time as to determining the location of the ore body belonging thereto. The company have machinery valued at \$75,000. At this date there is no work being done at the mine. The flow of water was greater than the pumps could handle, and work has been necessarily suspended till more powerful machinery can be procured.

RYE PATCH CONSOLIDATED MINING COMPANY.

RYE PATCH, NEVADA.

Office, 327 Pine Street. Geo. W. Kidd, president; D. F. Verdenal, secretary; L. W. Greenwell, superintendent; Geo. W. Kidd, Alex. Forbes, V. Fernbach, E. B. Clement, John M. Verdenal, trustees. No. of shares, 30,000. No. of assessment, 6. Amount, \$1 per share. Levied, August 26th, 1878. Total assessments, \$97,500. No. of dividend, 9. Amount, 25c. per share. Last declared payable December 31, 1878. Total dividends, \$127,500. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Rye Patch Company own the Alpha and Butte mines, located as far back as 1862, in Echo District, Humboldt County, Nevada. The ore extracted and milled has been considerable, nine dividends having been paid, aggregating \$67,500, against five assessments aggregating \$97,500. The company own a ten-stamp mill, which has been running until about the first of July. It will start up again about October 1st, with a supply of ore which will last for months.

ROUGH AND READY CONSOLIDATED GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 4, 306 Pine Street. H. Mayers, president; A. W. Robinson, secretary; J. C. Chalmers, vice-president; Wells, Fargo & Co.'s Bank, treasurer; David Lowrey, superintendent; John Tague, J. C. Chalmers, H. Mayers, E. E. McCammon, A. H. Rutherford, directors. Incorporated, October, 1878. Annual meeting, first Monday in October. No. of shares, 100,000. No. of feet, 3,000—2 parallel claims, 1,500 feet each.

The property composing this incorporation, consists of two locations of 1,500 feet each, situated on Bodie Peak, in Bodie Mining District, Mono County, directly west of the Syndicate and Sitting Bull, and north of the McClinton mine. This mine is developed by an incline shaft to the depth of 135 feet, showing a well-defined ledge of fair grade milling ore the entire distance from one to three and one-half feet wide. Also, by a drift at bottom of shaft, some 25 feet in length, showing that the true course of the ledge is nearly due north and south, being on a line with, and but a short distance from, the principal mines of the camp. The company propose to commence at once the practical working and developing of the mine, by sinking a perpendicular double-compartment working-shaft a short distance from the incline shaft. The location selected for sinking the new shaft gives the advantage of not less than one hundred feet lower surface and much more favorable ground for sinking, as well as a better location for surface improvements. The above description of this property may be verified by examination, as it is open to the public, and, being an old location, the title is indisputed. The superintendent is an experienced miner and a thorough business man—also, one of the principal owners in the mine; therefore the most economical management as well as the most vigorous prosecution of the work may be looked for, and favorable results expected by the stockholders. The company have set aside 12,000 shares of stock as working capital, which may be had at the office at a reasonable price, where maps of the property may be seen, and all information regarding it will be cheerfully given.

ROUGH AND READY MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 10, Halleck's Building. J. P. Garvey, president; Charles E. De Land, secretary; J. C. Caldwell, superintendent; C. W. Kellogg, Peter Dean, J. P. Garvey, J. M. Livingston, D. C. Ferris, trustees. Annual meeting in February. No. of shares, 100,000. No. of feet, 1,070. No. of assessment, 1. Amount, 10 cents.

The Rough and Ready Mining Company's property is located in Gold Hill Mining District, Storey County, State of Nevada, upon Grizzly Ravine, and adjacent to Gold Cañon. It comprises a mining claim of 1,070 feet upon the "Center Lead," a prominent and well-defined mineral ledge, the necessary buildings and hoisting works, with the appurtenances. The claim, or location, was made on April 10th, 1860, and all the requirements of the mining laws were fully complied with at the time. The shaft of the company has reached the depth of 230 feet, and is now in favorable looking mineral. The company has well-founded prospects for developing good milling ore at a short depth below their present workings. The ledge upon which this company is located has the reputation of producing within the past two years over \$7,000,000 in bullion, and is to-day only in primitive state of development. In addition to its well appointed shaft, the company has run a tunnel of several hundred feet in length, to strike its ledge from the ravine below, and has at the end of the tunnel the indications of the ledge in prominence. The mine of this company is well located, with reference to mines of reputation adjoining it, and whose workings have given them great celebrity in the stock market. It is surrounded by, and is bounded by the Alta, Justice, Lady Washington and Woodville mines, and will take its proper position among the prominent mines of the district within a short time.

RUBY SILVER MINING COMPANY.

GLOBE, ARIZONA TERRITORY.

Office, Room 19, Merchants' Exchange. J. I. Ayres, president; E. G. Freeland, secretary; C. W. Kinseman, superintendent; J. I. Ayres, F. H. Wells, J. W. Kinseman, L. B. Seaver, E. G. Freeland, trustees. Annual meeting, second Thursday in August. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Bullion yield, \$75,000.

This company have a strong, well-marked lode, carrying one of those deposits of remarkably high grade ore that have gained for this section of Arizona such a wide and well-deserved notoriety. Much of the ore taken from this mine yields from \$500 to \$800 in silver per ton—a notable percentage assaying as high as \$16,000 per ton. This ore belongs to the same school as that taken from the McMillan or Stonewall claim near by, containing, like it, a considerable quantity of native silver. The best of this ore is selected and shipped to San Francisco, the consignments that have already come to hand carrying from \$4,000 to \$9,000 in silver to the ton. The company are opening the mine with a shaft, and will prosecute work without abatement.

RUSTLER GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 1, 309 California Street. Robert Sherwood, president; A. F. Main, secretary; James R. Judge, superintendent; Robert Sherwood, George Storey, D. Crittenden, W. P. Willard, A. C. Ellis, trustees. Annual meeting, second Monday in September. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

This mine, which lies squarely on the main ore belt that traverses the Bodie District, is being developed by means of a vertical shaft, now sunk to a depth of about 100 feet. Drifting will soon be commenced, and the ledge exposed in depth, with every prospect of opening up rich bodies of ore. Work will not be intermitted until the mine is thoroughly explored.

SABINE MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 403 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. T. Weaver, E. E. Smith, trustees. Annual meeting, third Thursday in August. No. of shares, 100,000. No. of feet, 630. No. of assessment, 1. Amount, 15c. per share. Levied, December 1, 1877. Total assessment, \$15,000.

The Sabine Mining Company was incorporated July, 1876. This company is one of the series organized on the original Joe Scates Consolidated ground, and the location is directly east of, and adjoining the Ophir mine. This mine will be developed and worked through a lateral drift from the Suro Tunnel.

SAILOR BOY GRAVEL MINING COMPANY.

YANKEE HILL, TUOLUMNE COUNTY.

Office, Room 80, Nevada Block. I. R. Hall, president; Daniel Buck, secretary; Isaac R. Hall, John F. Knox, F. C. Moreback, G. J. Binder, trustees. Annual meeting, third Monday in October. No. of shares, 25,000. Acres, 1 60.

SAINT LOUIS GOLD AND SILVER MINING COMPANY.

AZTEC DISTRICT, PIMA COUNTY, ARIZONA.

Office, Room 14, 302 Montgomery Street. John Haynes, president; Chas. Cranz, Jr., secretary; John E. Magee, superintendent; C. S. Benedict, John D. Graham, W. G. Graham, E. S. Irvin, John Haynes, trustees. No. of shares, 100,000. No. of feet, 1,500.

The St. Louis mine is situated in the Aztec Mining District, Santa Rita Mountains, Pima County, Arizona Territory, and about one mile northeasterly from Camp Toltec, and is located on the eastern end of the Empress of India lode, or, as a part of the lode is here called, the General Craig lode. The western end of the mine lies on rather even ground, cut in a few places by arroyos, but the eastern end runs up over high hills. The size of the location is 1,500 feet by 600 feet. The course of the vein is north of east and south of west, and shows the whole length of the mine, from eight to twenty feet of metal. The formation, as is the case with all the other mines on this lode, which can be clearly traced for five miles, is perfect, being granite and porphyry. The ore is of high grade, and is copper-blende, copper-silver glance, sulphurets, and some chlorides. The value of all ore thus far extracted, will easily average over \$100 per ton. But little work has yet been done on this property, as the company was not incorporated until June 1, 1878, but the developments so far made are satisfactory. On this already famous lode there have already been made developments which insure its permanency, and discover the existence of great bodies of high grade ore. This mine, in the opinion of many competent experts, is one of the best on the lode, and will soon become famous for its richness and extent. Near the western end of the mine an arroyo cuts the vein, in the bottom of which the ore, or mineral, shows a solid body of eight feet in width, imbedded in porphyry and granite, while two other threads run parallel with this large body of ore of twelve and fifteen inches in width; here the mine is shown in perfect formation, the vein dipping north, quartz, quartzite, and gangue, all impregnated with copper-blende, and copper-silver glance mineral. From this arroyo, for a distance of 150 feet east, nature had done a work that would cost many thousands of dollars to perform; the wash down through the gap through the hills at this point, through centuries of time, has uncovered the vein for 180 feet, including the arroyo, and there now lies exposed to view, a body of mineral from eight to twelve feet in width, which assays from \$25 to \$250, right on the surface; with a common pick and shovel

wagons could be here loaded with first-class ore. A shaft is now being sunk about 100 feet east of this arroyo, and on the extreme north side of the croppings, which has attained a depth of about forty feet. The work so far done develops a continuous body of ore from the arroyo, some fifteen feet in width, and rapidly widening as depth is attained. This property is now in the hands of a strong and energetic, experienced company, and will be speedily developed. The facilities for mining are the best. The climate is such that work can be prosecuted every day in the year, the temperature rarely falling below 50°, and seldom rising above 90°; work is easily accessible. The best water-power in Arizona is within five miles, and labor is unusually cheap. Upon the erection of proper reduction works, the ores should be milled at a cost not exceeding \$12 to \$15 per ton. Col. John D. Graham, Managing Director, a first-class business man, and experienced miner, has charge of operations in the field. The reduction works of the company will soon be in course of erection, work on the mill-site, flumes, etc., being now vigorously pressed.

SAN FERNANDO MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, fourth Monday in August. No. of shares, 100,000. No. of feet, 1,560. Shares per foot, 64.

To the south and east of the Florida, there crops to the surface a broad, well-defined ledge, which has been christened the Vivian & San Fernando Lode, because these locations were made there in an early day. The San Fernando holds the southern extremity of the lode. It was prospected in early days by a tunnel from the ravine below, 750 feet, into the vein, cutting the ledge from 60 to 100 feet below the surface. The tunnel passed through two distinct ledges, both mineral-bearing: the first (called the Vivian Lode) is 300 feet in thickness, and contained ore in streaks and bunches. Twenty feet further on, the second ledge was intersected, which was 200 feet in width. While both ledges carry mineral, they are entirely distinct in their appearance and other characteristics. These ledges, where cut and on the surface, yield good assays. A large three-compartment combination working shaft is being sunk on the line dividing this claim from that of the Vivian Consolidated Company. The expense of development is equally apportioned between the two companies.

SAN XAVIER MINING AND SMELTING COMPANY.

PIMA, ARIZONA TERRITORY.

Office, Room 32, Merchants' Exchange. D. W. F. Bisbee, president; F. A. McGee, secretary; A. S. White, superintendent; D. W. F. Bisbee, R. F. Knox, H. J. Booth, George W. Hopkins, C. P. Sykes, trustees. Annual meeting, second Thursday in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66½.

This company was incorporated under the laws of California, January 28th, 1878, as a mining and smelting company, to operate in the Territory of Arizona. The mine now owned by the company is located in the Pima Mining District, about 18 miles south of Tucson, A. T. Two shafts, B and C, are being sunk on the ledge, and are now (August 15th, 1878) about 80 feet from the surface. The shafts are about 254 feet apart, and, from the surface down to their present depth, nothing but ore, scarcely, has been found, assaying from \$25 to \$180 per ton—the average of the ore on their dumps being over \$50 per ton. Over 500 tons are now out, all being taken from the shafts alone, as no stoping, drifting, or crosscutting has as yet been done. It is designed to run a drift along the vein from shaft to shaft when down 100 feet, and then to crosscut and stope out the ore.

At an early date, it is the intention of the management to erect works, complete, for smelting, and separating the silver from the lead. Abundance of wood can be had, at a cost not exceeding \$3 per cord, near the property, and water in abundance all the year. The San Xavier Ledge is said to be the most extensive one yet found in the Territory, the outcrop being over 200 feet wide in places. The ore is argentiferous galena, and easily smelted, carrying over 40 per cent. of lead. It is estimated that already ore enough is on the dump to pay for cost of erection of works, taken out at a cost for mining of about \$4,000.

SAVAGE MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 15, Nevada Block. Gen. Thomas H. Williams, president; E. B. Holmes, secretary; M. G. Gillette, superintendent; T. H. Williams, J. W. Coleman, Homer S. King, George W. Gordon, J. B. Russell, trustees. Annual meeting, third Thursday in July. No. of shares, 112,000. No. of feet, 800. No. of assessment, 35. Amount, \$1 per share. Levied, Sept. 6th, 1878. Total assessments, \$3,972,000. No. of dividend, 52. Declared, June 11th, 1899. Total dividends, \$4,460,000. Bullion yield, \$15,700,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Savage mine is situated between the Gould & Curry and Hale & Norcross. Few mines on the Comstock Lode have been as thoroughly prospected as this. It has more feet of drifts, crosscuts, shafts, winzes, and inclines than almost any of its neighbors. The croppings were worked to the depth of 335 feet by the old North Potosi and Bowers tunnels, through the latter of which a large quantity of ore was stoped out. The old shaft reached the depth of nearly 700 feet, and the ore extracted between the second (255 feet) to the seventh level (661 feet) from the surface. The new shaft is located considerably to the east of the old one. A considerable body of ore was struck in this shaft on the first level, 567 feet from the surface, which

extended to the fifth level, at the depth of 963 feet. Other bodies of ore were found on the seventh, eighth and eleventh levels, the latter being run at the depth of 1,607 feet. The workings in the Savage are very deep and extensive. The incline which begins at the 1,300-foot level has been sunk to two thousand two hundred and twenty feet, from which a winze was sunk to the depth of 120 feet perpendicular, making an extreme depth of two thousand three hundred feet. It was while drifting on the 2,200-foot level, that a vast body of water was tapped, the flow of which was so great that the pumps and baling apparatus could not control it, and it has taken nearly a year to reduce the water to 120 feet below the 2,000-foot level, at which it stood at latest reports. The mammoth compound horizontal pumping engine of 500-horse-power, similar to that at the C. & C. shaft, which has been erected since the last issue of THE MINING REVIEW, has reduced the water to such an extent as to admit of working on the 2,000-foot level. This powerful engine is controlled by the Davy differential valve. Its initial cylinder is 27 inches in diameter, the piston having a stroke of eight feet. The expansion cylinder is 40 inches in diameter, with eight feet stroke of piston. It is capable of running a column 4,000 feet of 14-inch pumps. It cost about \$175,000. The hoisting machinery of this mine is also of a very powerful and superior character, consisting of a conical reel, on which a double engine winds and unwinds in a continuous groove a steel wire cable 4,000 feet in length, made in such a tapering form that it requires no more power to hoist to the surface than to work a giraffe on the lowest level.

At latest dates, the company were engaged in crosscutting on the 2,000-foot level, about 400 feet from the Gould & Curry line. The amount paid as dividends by this company shows that the mine has been an important bullion producer; and there is little doubt that when its lower levels shall be in a condition for proper working, it will produce as well as ever. The condition of these lower levels at the time of their flooding, was most encouraging, especially at the point where the water was struck. It has been the general rule on the Comstock, that large bodies of water indicate the proximity of heavy deposits of rich ore.

The combination shaft of the Savage, Chollar-Potosi, and Hale & Norcross, is described in detail in the article on the Chollar-Potosi mine.

SCORPION SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 310 Pine Street. Robert Sherwood, president; George R. Spinney, secretary; R. P. Keating, superintendent; Robert Sherwood, C. F. McDermott, O. F. Giffin, J. P. Jackson, H. F. Cutter, trustees. Annual meeting, second Monday in May. No. of shares, 100,000. No. of feet, 1,324. Listed on San Francisco Stock and Exchange Board.

This is an old location, situated beyond the junction of Six and Seven Mile Cañons, extending north of North Con. Virginia, and reaching nearly to the Mexican and Union Con. There has as yet been but little work done on the property, beyond running a tunnel along the ledge, and obtaining an indication of the value of the mine. Recently a division of property in this locality has just been made, by which the Scorpion will retain 1,324 feet of the ground nearest the Union Consolidated and Sierra Nevada mines. This ground will hereafter be known as the Scorpion mine. The balance of the property will be conveyed in equal parts (800 feet each) to form new companies for certain considerations. The names of these incorporations are to be the Keating, Warsaw, the Garber and the Thornton. Each of them is to consist of 100,000 shares of the par value of \$100. The stockholders in the Scorpion (1,324 feet) will receive a dividend *pro rata* of the stock in the new mines, each of which has 800 feet.

SEGREGATED BELCHER MINING COMPANY.

GOLD HILL, NEVADA.

Office, 414 California Street. R. F. Morrow, president; George D. Edwards, secretary; R. F. Morrow, R. N. Graves, J. H. Dobinson, Joseph Clark, R. Wegener, trustees. Annual meeting, first Tuesday in October. No. of shares, 6,400. No. of feet, 160. Shares per foot, 40. No. of assessment, 15. Amount, \$5 per share. Levied, April 10, 1876. Bullion yield to October 1, 1877, \$235,733.85. Listed on San Francisco Stock and Exchange Board.

SEGREGATED CALEDONIAN MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, Room 21, 419 California Street. C. L. Weller, president; D. L. Thomas, secretary; C. L. Weller, Chas. S. Neal, Wendel Easton, William H. Bremer, C. F. Horn, trustees. Annual meeting, last Thursday in August. No. of shares, 30,000. No. of feet, 100. Shares per foot, 300. No. of assessment, 2. Levied, February 29, 1876. Total assessments, \$111,600.

This mine holds a narrow strip uniting the Caledonian and Knickerbocker locations. Its value is to be determined by its position rather than by any developments in the location itself.

SELBY COPPER MINING AND SMELTING COMPANY.

ROBINSON, WHITE PINE COUNTY, NEVADA.

Office, Room 32, Merchants' Exchange. Smith Ely, president; Francis A. McGee, secretary; Thomas H. Selby, superintendent; Smith Ely, Thomas H. Selby, J. W. Long, F. F. Thomas, D. W. F. Bisbee, trustees. Annual meeting, second Monday in September. No. of shares, 100,000. No. of feet, 24 mines, 1,500 each. Shares per foot, 23.

This company incorporated under the laws of California September, 1878, for the purpose of mining for copper ores, and smelting the same in the State of Nevada. Smelting works are already erected, with a capacity for smelting 50 tons of ore per day. An abundance of wood for burning charcoal is found near the mines, at a very low price, and a fine stream of running

water all the year through, gives all the power required for running machinery and furnaces. The company owns within a radius of seven miles from their furnaces, twenty-four copper mines, well developed, from which, within 12 months, they expect to take out, at least, 100 tons of ore per day. The ore is of very superior quality, easily smelted, and now averages 20 per cent. in copper. Carbonates and oxides are the characteristics of the ores yet laid bare, and many thousand tons are in sight. This company is in the hands of but few individuals, nearly all of whom are experienced in copper mining and smelting, and devote their time and personal attention to the development of their enterprise, which is destined to be, at an early day, the most important copper enterprise west of the Rocky Mountains. Refining furnaces are to be erected shortly, to produce ingot copper, instead of the black copper now produced.

SELBY HILL MINING COMPANY.

NEVADA CITY, NEVADA COUNTY, CALIFORNIA.

Office, Rooms 6 and 7, 211 Sansome Street. H. H. Pearson, president; H. Augustus Whiting, secretary; John Cashin, superintendent; H. H. Pearson, O. W. F. Randolph, Julius Jacobs, James Brooks, T. C. Lamps, trustees. Annual meeting, third Monday in December. No. of shares, 40,000. Bullion yield, \$8,123.20.

SEVENTY-SIX SILVER MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA TERRITORY.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; S. W. Foreman, superintendent; C. Gurnee, Fred. W. Hadley, C. W. Kellogg, L. Vesaria, E. F. Stone, trustees. Annual meeting, third Wednesday in October. No. of shares, 100,000. No. of feet, 1,500.

The company have a 5-stamp concentration mill at Picket Post, and the "Seventy-six" mine near the "Silver King." The mine is developed by shaft, 153 feet in depth, by several drifts. A new working shaft is now being sunk, which will be connected with the old shaft for ventilation. The mine is believed, by many experts, to be on the Silver King lode. The character and richness of the ore much resembles that taken from the King. The mill is complete and is doing fine work—the average crushing having been about 18 tons per day since it started in June last. Machinery for hoisting works at new shaft is on the ground, and is of sufficient power to sink 1,000 feet, and will be erected at once. The title to the Seventy-six mine is perfect.

SHEBA SILVER MINING COMPANY.

HUMBOLDT COUNTY, NEVADA.

Office, 312 Montgomery Street. J. L. E. Kelly, president; A. Halsey, secretary; Peter Woolcock, superintendent; J. L. E. Kelly, P. H. Kraner, R. E. Brewster, C. C. Knox, J. H. Kinkead, trustees. Annual meeting, February 28th. No. of shares, 100,000. Total assessments, \$50,604.80. Bullion yield, \$15,922.26.

SENATOR MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 5, 302 California Street. George Congdon, president; L. Reynolds, secretary; Frank M. Thayer superintendent; George Congdon, W. S. Wood, T. G. Taylor, S. Lubeck, L. Reynolds, trustees. Annual meeting, August 25th, 1878. No. of shares, 108,000. No. of feet, 2,000. Shares per foot, 54. Listed on the San Francisco Stock and Exchange Board.

This ledge was located in Virginia mining district in 1862. The claim adjoins the Julia to the southeast, and lies directly eastward of the Chollar-Potosi, Hale & Norcross and Savage. It is supplied with powerful machinery, fully ample for present purposes. Its location is one of the best on the Comstock. The mine is entirely free from debt, and energetic work is progressing toward a full development. This work will be carried on through the Sutro Tunnel, a contract having been made with the tunnel company for this purpose. The tunnel from the Sutro to the Julia will be run directly through the property, and a rich development is expected.

SIERRA NEVADA GOLD AND SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, Room 42, Nevada Block. John Skae, president; W. W. Stetson, secretary; C. M. Bonnemort, superintendent; John Skae, Jos. Clark, A. E. Head, R. N. Graves, Chas. H. Fish, trustees. Annual meeting, third Wednesday in January. No. of shares, 100,000. No. of feet, 3,600. No. of assessment, 55. Total assessments, \$2,275,000. No. of dividend, 11. Amount, \$102,500. Declared, January 16, 1871. Bullion yield, \$906,552.10. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The career of this mine is familiar to the old denizens of the Comstock. Its former successes, hardships, and sometimes disrepute, are alike known to those who have participated in the ups and downs of the developments of the mines of Storey County, Nevada. Indeed, there is no mine in the Silver State that, up to date, has had so remarkable experiences. The property contains 3,600 feet, and the original record of location can be found in Book A, page 1, of the Gold Hill Records. Thus it will be seen that it is the oldest recorded location on the Comstock. It is composed of a combination of other somewhat ancient claims with the original Sierra Nevada. These locations have, during the career of the original location, and in part since the consolidation, produced over \$2,000,000, most of which was gold. The greater portion of this was taken out before the present incorporation. The original location, as is well known, is at what was formerly designated as the north end of the Comstock. For a long time, in addition to sinking a shaft and establishing works on the original site, a great deal of gold was taken out of Cedar Hill, which in part is embraced in the original location, and into which a tunnel had been run that for a long time yielded 60 tons of ore per day.

This was stopped for about two years prior to 1875, and the managers, believing there existed a valuable bonanza development farther to the north, shut down the mill temporarily, and began the sinking of what is now known as the new shaft. In the year 1874-5, the mine produced \$90,700 in bullion; but, to start the work on the new shaft properly, more money was needed, and three consecutive assessments were levied, to the disgust of the stockholders, producing \$250,000. Since then, there have been levied 52 assessments, aggregating \$2,275,000—the last one, of one dollar per share, having been imposed July 31, 1878. The amount of dividends paid, \$102,500. During the year 1874, there were expended \$210,000 on the new shaft; and, at the end of that fiscal year, there was cash on hand, \$33,000, and \$2,200 from an assessment. The hopes of the managers still centered on the new shaft, and, in full faith in the great development, from that day to this, every effort has been made in prosecuting the work to its present fruition.

It may be well to remark that the new shaft is located about 1,100 feet east and 1,000 feet north of the old shaft. Both shafts are working at present, although the new shaft is the present attraction on the Comstock. The old shaft is prospecting by means of drifts and crosscuts on various levels from the 300-ft. down, running westerly toward the ledge. It was some time since that over 1,200 feet of the vein were laid bare on the 700-ft. level; and from this, as well as nearly all of the other levels, the indications have continued to improve. The developments on the 1,000, 1,250, and 1,510-ft. levels inspired renewed confidence, and the work has since been pushed on with great energy. Indeed, it may be said in truth, that, since this property fell under the control of the present management, it has been worked for all it is worth. Mr. Skae, who presides over the destinies of the mine, is fully competent to bring from the lowest depths all of the treasure therein contained, inasmuch as he is a thoroughly practical miner, and as competent an expert as ever examined a lead. In addition, he is indefatigable in everything he undertakes; and, since his assumption of the management, the mine has advanced with rapid strides in development, and the stock has become the most popular of those listed on the Boards. The amount of machinery now in use on the new shaft is sufficient to develop the property to a depth of 2,200 feet.

The interest in the mine at present is centered in the main south incline in the new shaft. The ore vein covers the full size of the incline, and assays from \$300 to \$800 per ton. The crosscut near the 2,100-foot level has not been worked for some time, and the face still remains, at this date (October 2) in the rich ore heretofore reported. The incline has but 15 or 20 feet to run before the 2,200-foot level will be reached and crosscutting begun. The assays taken at the latter vicinity speak for themselves: West crosscut, \$938.46; left of incline, in cap rock, \$7; right of incline, in cap rock, \$43.15; six inches deeper than face of crosscut, \$725.75; a duplicate assay reached \$838; average samples from west crosscut assayed \$115.53; center and front of incline, just below cap rock, \$111.77. Such is the property that, after long years of patient waiting, hard toil under discouraging circumstances, and too often almost hopeless surroundings, comes forth from hidden recesses to reward the perseverance of the management. Here, we are assured, is indeed a new and immense bonanza, the harbinger of better times at the north end. To successfully utilize this rich development, new reels and hoisting machinery have been put in, and are now working admirably; and in a few weeks we may look for a still more satisfactory balance-sheet from the mine. It is understood that before long the company will begin the erection of extensive reduction works on Seven-mile Cañon, a short distance below the mine. This will be needed, as the development progresses so rapidly in such high-grade ore. From present indications on every hand, there is but little doubt that the day is very near when Sierra Nevada will be a dividend-paying mine. The following statement of the highest and lowest points the stock has reached during the last four years, is suggestive of the variety of results that have attended the work of development. They are also suggestive of the estimation in which the mine has been held by operators. Really, in this bit of history, extremes meet:

LOWEST.			HIGHEST.										
1875	—	May	..	..	..	\$9.00	1875	—	January	..	..	..	\$27.50
1876	—	December	..	..	..	8.50	1876	—	“	..	..	..	28.75
1877	—	May	..	..	..	75	1877	—	“	..	..	..	10.00
1878	—	“	2.75	1878	—	September	..	..	..	270.00

In another portion of this work we have theorized somewhat, but in this connection it may not be out of place to ask, if the recent successes of this mine are not at least indicative of a new era in mining on the Comstock?—if they do not actually demonstrate the correctness of certain oft-repeated theories? May not the underground exhibit of to-day be but the forerunner of a colossal development of heretofore unknown richness? These queries, and many more, will receive their answers before many months elapse. However, sufficient unto the day is the bounty thereof. We leave developments of the future in charge of an efficient management, that can read its title clear to bonanzas yet untold.

SEGREGATED GOLD HILL MINING COMPANY.

GOLD HILL, STORRY COUNTY, NEVADA.

Office, 309 California Street. E. T. Bacon, president; J. M. Buffington, secretary; Annual meeting, at call of the president. No. of shares, 60,000. No. of feet, 1,000. Shares per foot, 60. Listed on San Francisco Stock and Exchange Board.

The Segregated Gold Hill lies immediately west of the Alpha and Exchequer, lapping upon both the Bullion and Imperial Consolidated, and east of the original Gold Hill. The prospecting was very active here in the early days, and much ore was taken out in the adjoining localities. The shaft is down about 420 feet, and has cut into a well-defined body of lively quartz, with rich spots that assay high. The ledge looks very favorable, and has well-defined walls. The mines lying east of the location will drain the property. Lately, the work has been suspended for want of funds.

SIGNAL SILVER MINING COMPANY.

MOHAVE COUNTY, ARIZONA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; C. S. Curtiss, secretary; Thomas Ewing, superintendent; A. K. P. Harmon, J. D. Fry, A. J. Ralston, W. S. Hobart, George W. Prescott, trustees. Annual meeting, first Tuesday in April. No. of shares, 100,000. No. of assessment, 2. Amount, 50c. per share. Levied, May 16th, 1878. Total assessments, \$73,576.50. Bullion yield, \$60,113.52.

SIGOURNEY GOLD AND SILVER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA,

Office, Room 25, Nevada Block. D. Perry, president; Geo. C. Pratt, secretary; S. W. Blaisdell, superintendent; Geo. W. Hazelton, J. W. Winter, D. Perry, Samuel I. Marston, John Sanborn, directors. Annual meeting, third Tuesday in August. No. of shares, 70,000. No. of assessment, 1. Levied, Sept. 27, 1878. Amount, 25c. per share. Total assessments, \$17,500.

SILVER CROWN MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, Room 1, 240 Montgomery Street. Thos. S. Atherstone, president; A. W. Robinson, secretary; T. S. Atherstone, F. M. Hackett, C. O. Dean, A. W. Robinson, M. C. Jewell, trustees. Annual meeting, 16th of March. No. of shares, 100,000. No. of feet, 1,500.

SILVER GLANCE MINING AND SMELTING COMPANY.

MOHAVE COUNTY, ARIZONA.

Office, 80 Nevada Block. E. M. Walker, president; Daniel Buck, secretary; E. M. Walker, Ira P. Rankin, Daniel E. Gillette, Jr., Emerson Gaylord, James D. Brewer, trustees. Annual meeting, second Thursday in March. No. of shares, 50,000. No. of feet, 1,500 by 000.

SILVER HILL MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; M. C. Hillyer, superintendent; A. K. P. Harmon, W. S. Hobart, C. N. Felton, George Congdon, S. Heydenfeldt, trustees. Annual meeting, last Monday in May. No. of shares, 108,000. No. of feet, 4,200. Shares per foot, 25 $\frac{1}{2}$. No. of assessment, 2. Amount, 50c. per share. Levied, Sept. 30, 1878. Total assessments, \$1,296,000. Bullion yield, \$138,033. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

From the slight excavations made on the several claims composing the property of this company, something like a \$1,000,000 worth of ore is supposed to have been taken. This ore was of such high grade that it paid a handsome profit at a time when the cost of extracting and milling was greatly in excess of present rates. These claims were among the first located along Gold Cañon, having been taken up when the pioneer prospector had his pick of the ground in that locality. During the past two years exploration has been carried on here without interruption, various surface improvements having been added to the property meantime. Among the latter may be enumerated the placing of a 13-inch plunger pump at the 800-foot station, the construction of a powerful air compressor, the erection of boiler house and machine shop and the procurement of a partial set of new boilers and an extra engine to drive the lathes, planes, drills, etc., together with a new cylinder and a 6,000-pound fly-wheel, the last two required for the further sinking of the main incline, now down about 1,000 feet, and which, with the machinery on hand, can be carried to a vertical depth of 1,500 or 1,600 feet. Work of late has been prosecuted chiefly on the 650, the 800 and the 900-foot levels, on each of which extensive drifting and crosscutting have been carried on. Some winzes, with lateral drifts, have also been excavated, an ore body four and a half feet thick giving assays as high as \$50 per ton, having been cut in the winze sunk on the 650-foot level. As its inclination carried it away from the winze, this ore find has not yet been followed up, though regarded as one of much promise. The main drift east on the 800-foot level, now advanced over 700 feet in that direction, has passed through many seams of lively looking quartz, carrying patches of medium grade ore, the face of the drift being in a favorable formation. The north drift on the 650-foot level connecting with the 1,000-foot level of the Justice secures improved ventilation in both mines. The south drift on this level, after being extended to the north line of the St. Louis, has been carried along that line northeasterly for a distance of over 100 feet. While the face of the south lateral drift on the 800-foot level is in good quartz, the entire face of the north drift on this level is in quartz and ore, the latter being of very fair grade, and the vein matter throughout of a compact and lively nature, promising the uncovering of a pay chute of ore at every foot of advancement made. The main east drift on the 900-foot level is also in solid quartz, blotched with good ore. It is due the management to state that while pushing developments steadily forward, they have operated this mine with a strict regard to economy, current expenditures having been kept within moderate bounds. As the property is well equipped and the plant in good condition, the shareholders of the Silver Hill are not likely to be heavily burthened in the future, while their chances for speedily opening up a paying mine are certainly very good.

SILVER KING MINING COMPANY.

PIONEER, ARIZONA.

Office, 320 California Street. George L. Woods, president; Wm. H. Boothe, secretary; Aaron Mason, superintendent; James M. Barney, B. W. Reagan, B. A. Barney, George L. Woods, W. H. Boothe, trustees. Annual meeting, second Tuesday in January. No. of shares, 100,000. No. of feet, 1,500. No. of dividend, 8. Amount, \$50,000. Declared, August 21, 1878. Total dividends, \$400,000. Bullion yield, \$2,000,000. Listed on San Francisco Stock and Exchange Board.

Among the many rich and notable silver mines of the Pacific States is the Silver King, situated 35 miles northeast from Florence, in Pioneer Mining District, Pinal County, Arizona, in a range of high and rugged mountains, known as the "Pinal Mountains," extending for many miles through the territory in a northwesterly and southeasterly direction, and everywhere replete with evidence of great mineral wealth—rich ores of silver, gold, copper, lead, antimony and other metals being found all along this mountain range for a distance of over one hundred miles. In fact, the "Pinal" is only a section of the great "Sierra Madre" of Mexico, and directly in the great metal-bearing "belt" or "zone" of North America. The "Silver King" is a new mine, having been accidentally discovered and located in March, 1875; but no work of note done thereupon until July, 1876, when the work of development properly commenced. The outcroppings of the ledge was found upon the apex of a small conical hill or mountain, just below the summit of the main "Pinal Range," where the same is crossed by the old military road, known as "Stoneman's Grade," in a belt of grauite, very hard and compact. The vein matter of the Silver King is principally a pure quartz, highly crystalline, hard and friable, and rich in native silver and silver ores, with considerable quantities of very rich argentiferous galena, some of which is over 30 per cent. lead, and worth over \$1,000 per ton in silver. The vein has been partially explored to a depth of over 250 feet, without any apparent diminution in the richness or quantity of ore. The ledge is perfectly well-defined, and at a depth of 160 feet it is over 70 feet thick, with perfect and well-defined walls, clay gauge, etc., and shows, unmistakably, that it is destined, at some future day, to be one of the great, rich and lasting silver mines of the world. As yet, it is only partially developed; it has had no extrinsic aid whatever; no assessments have been levied; no subsidy asked or required. The mine has not only paid expenses, but a handsome profit from the start; has built roads, erected a first-class 10-stamp mill, made costly and valuable improvements, and all this under the most adverse circumstances—the mine being in a far-off territory; distant from commerce, with no supplies; away from all lines of transportation outside a mining community, and yet has been worked with profit; made a success, as a legitimate, industrial enterprise, affording a worthy example of what can be done in mining by the exercise of faith, industry and business sagacity. It is impossible to determine the exact average value per ton of the Silver King ore. Much of the inferior ore is on the "dumps" of the mine. Before the mill was erected, much of the richer ore was sold in gross in San Francisco, sent East, etc.; and since then much ore has been concentrated at the mill, and concentrations sold, etc. Much of the ore is wonderfully rich, large quantities of it being worth from \$10,000 to \$17,000 per ton; beside which are occasionally found considerable quantities of almost pure silver, called by the miners "Silver Nuggets." Of the gross product of the mine, 9,000 tons have been sold, at various prices and in various ways, but all aggregating the sum of \$1,900,000; and being, perhaps, nearly 80 per cent. of the actual assay value of all the ore so sold. The Silver King is being continuously worked, with a regular and constantly increasing yield in the production of ore, which will be still further augmented upon the completion of the regular steam-hoisting works now in contemplation.

SILVER KING NORTH SILVER MINING COMPANY.

PIONEER, ARIZONA.

Office, Room 36, 330 Pine Street. W. E. Hale, president; J. H. Sayre, secretary; J. W. Gain, superintendent; W. E. Hale, Jas. Walsh, Leon Well, Camil Martin, H. L. Coye, trustees. Annual meeting, July. No. of shares, 100,000. No. of feet, 1,500. Shares per lot, 60¢.

SILVER NUGGET MINING COMPANY.

GLOBE, MARICOPA COUNTY, ARIZONA.

Office, Room 80, Nevada Block. J. M. Martin, president; Daniel Buck, secretary; D. G. Chilson, superintendent; J. M. Martin, W. E. Dean, Jas. Fulton, A. P. Overton, L. A. Kelly, trustees. Annual meeting, last Friday in December. No. of shares, 100,000. No. of feet, 722 by 600.

This mine is located in Richmond Basin, Globe District, Pinal County, Arizona. The property was discovered February 17, 1876. The ore was first found in a float vein, and was of a very high order. It assays from \$2,000 to \$8,000 per ton. The average assay of twenty tons was about \$3,500. An open cut has been run about 400 feet on the float vein, which developed a vertical vein of fine ore. Here a shaft has been sunk to a depth of seventy feet, showing the same character of rich deposit of chloride and silver glance ore, as passed in the float vein. At a depth of forty to fifty feet the vein is from two to three feet in width. At the depth of forty feet the ore assays from \$1,000 to \$6,000 per ton. There are three shafts in all; the first, to a depth of thirty-two feet; the second, seventy feet; and the third, thirty feet; each carries the same character of ore.

SILVER QUEEN MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA TERRITORY.

Office, 320 California Street. B. A. Barney, president; Wm. H. Boothe, secretary; W. R. DeFrees, superintendent; Geo. W. Hopkins, B. A. Barney, W. R. DeFrees, B. W. Reagan, Wm. H. Boothe, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

This claim is situated about two miles southeasterly from the celebrated Silver King mine, which has made such a wonderful hullion production the past year. It is one of the earliest locations made in the Pioneer District, and from its supposed position on the rich mineral belt that here crosses the country, is a property of large prospective value. The main ore-bearing stratum in the ledge carries a grey carbonate of copper and malachite, with an exceedingly rich silver ore, some portions of which assay over \$10,000 to the ton, no inconsiderable percentage, in fact, being virgin metal. The lode proper ranges from five to six feet in width, there being on each side of it a formation that contains scattered bunches of high-grade silver ore, and which it is thought may eventually gather into the main lode, giving it great enrichment. The country rock is composed of slate, basalt, granite and mountain limestone, the formation being much mixed up. This mine has been partially prospected by means of three shafts and a tunnel, one of the shafts being about 100 feet deep. Several hundred tons of ore have been taken out, a portion of which has been shipped to market, the whole of it being of high grade. This company will proceed to explore the mine in a systematic and thorough manner, having ample means for the purpose, and being satisfied that money so expended will prove a good investment.

SITTING BULL MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 2, San Francisco Stock Exchange. Wm. M. Stewart, president; W. H. Lent, secretary; A. W. Fox, superintendent; Wm. M. Stewart, Wm. M. Lent, W. B. Can, F. Tagliabue, F. K. Bechtel, trustees. Annual meeting, first Monday in April. No. of shares, 60,000. No. of feet, 1,000. Listed on San Francisco Stock and Exchange Board.

The Sitting Bull mine is located west of the Bechtel, and has been prospected to a depth of 200 feet. At the bottom of the shaft the ledge shows a thickness of 26 inches, and the quality of ore remains the same, looking splendidly, as at first, and giving assays at from \$100 to \$200 per ton. The ledge is increasing in width, and from all indications the mine will prove a valuable property.

SLATE CREEK GOLD MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 240 Montgomery Street. F. H. Wells, president; J. L. Fields, secretary; F. H. Wells, Geo. W. Osborn, W. A. Roberts, J. H. Pohlker, E. T. Dennison, trustees. Annual meeting, first Thursday in August. No. of shares, 100,000. Six miles of bed of Slate Creek.

SOUTH BARCELONA MINING COMPANY.

SPANISH BELT, NYE COUNTY, NEVADA.

Office, 320 Sansome Street. Benj. Flint, president; Warner Craig, secretary; Benj. Flint, Richd. Homfray, F. A. Benjamin, H. K. Moon, trustees.

SOUTH BODIE GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 44, Nevada Block. Robert Barton, president; Henry Deas, secretary; H. C. Callahan, superintendent; B. B. Minor, E. C. Morton, Henry Deas, W. H. Brown, Robert Barton, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The property of this company consists of the "Hancock" claim, 1,500 feet long, located in June, 1877. It lies to the south of the celebrated Bodie mine, and indications lend a strong support to the theory that the rich veins struck by the Bodie Company will be found in the South Bodie ground when sufficient depth is attained. The surface ground on this claim was worked with great success as a placer claim in the early days of Bodie Bluff, and the richest float quartz ever struck in the district was found near the point where sinking is now in progress on this mine. A shaft has been sunk on this claim to a depth of 120 feet, over which a fine engine has been erected for hoisting ore, and satisfactory progress is being made at all points. It is proposed to sink the shaft to a depth of 200 feet, when crosscutting will commence and be prosecuted until the vein is struck. The bottom of the shaft is now in ledge matter. Within 60 days important developments are looked for.

SOUTH COMSTOCK CONSOLIDATED SILVER MINING COMPANY.

DEVIL'S GATE, STOREY COUNTY, NEVADA.

Office, 309 California Street. Robert Sherwood, president; J. M. Buffington, secretary; Robert Sherwood, George Schultz, W. F. Myers, George W. Rogers, J. M. Buffington, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 2,000. (S. C. lode) 1,500 (Cliff House lode.) Shares per foot, 5.

The South Comstock lies south of the Monumental and Leo, and south and east, and adjoining the Silver Hill. The ledge is plainly traceable through the claim by croppings here and there along the surface, and by other unmistakable indications. The location for the shaft has been carefully selected to the east of the ledge, which will be found to pitch in that direction. The shaft has been sunk to the depth of 500 feet. From the station on this level a drift was run west to the ledge, which was reached at a distance of 330 feet. The drift at last accounts

had penetrated the vein nearly 100 feet, and showed no signs of approaching the west wall, which is the objective point. The company has secured a U. S. patent for their claim, and have erected hoisting works of sufficient capacity to sink, at least, 1,000 feet. The developments thus far made show a ledge of five feet, in low grade ore. The prospects for the mine are excellent.

SOUTH END MINING COMPANY.

DEVIL'S OATE, LYON COUNTY, NEVADA.

Office, Room 6, 318 Pine Street. Edw. F. Stone, president; J. W. Clark, secretary; J. B. Overton, superintendent; E. F. Stone, J. M. Walker, M. D. Howell, S. N. Putnam, E. S. Davis, trustees. Annual meeting, third Wednesday in March. No. of shares, 100,000. No. of feet, 3,000. No. of assessment, 3. Amount, \$20,000. Levied, January 9, 1878. Total assessments, \$40,000.

The South End mine (embracing the location formerly known as the Comet) shows, for the work done upon it, very promising indications. A well-defined ledge, and carrying a body of ore which assays from \$150 to \$250 per ton. There has not been any work done for several months. Measures are being taken to secure the requisite amount of capital, and it is expected that the company will begin the further development of its property soon.

SOUTH FEATHER WATER AND UNION MINING COMPANY.

PLUMAS, YUBA AND BUTTE COUNTIES, CALIFORNIA.

Office, 312 Montgomery Street. E. Green, president; H. R. Kimball and Jno. Harris, superintendents; E. Green, G. Palache, H. M. Newhall, C. F. Bowman, R. E. Brewster, trustees. Annual meeting, August 4th. No. of shares, 60,000.

SOUTH JUSTICE MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 3, 419 Pine Street. E. N. Torrey, president; Edward F. Stone, secretary; E. N. Torrey, C. E. Elliott, J. H. White, J. T. Babcox, E. F. Stone, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of feet, 400. Shares per foot, 250.

The South Justice lies between the Justice and Silver Hill mines, connecting the two. The best developments of the Silver Hill are at the north end, and the big ore body of the Justice is well to the south, and makes still further in that direction. Active developments are about to be commenced.

SOUTH OVERMAN SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room #21, 323 Montgomery Street. A. P. Cox, president; David Wilder, secretary; A. P. Cox, C. A. Schmitt, J. Clein Uhler, J. H. H. Williams, David Wilder, trustees. Annual meeting, fourth Saturday in July. No. of shares, 30,000. No. of feet, 1,500. Shares per foot, 20. No. of assessment, 3. Amount, \$30,000. Levied, August 6, 1875. Total assessments, \$60,000. Listed on San Francisco Stock and Exchange Board.

SOUTH SPRING HILL MINING COMPANY.

AMADOR COUNTY, CALIFORNIA.

Office, 320 Sansome Street. Benj. Flint, president; Warner Craig, secretary; Benjamin Flint, John Tregloan, W. H. Reynolds, Geo. P. Thurston, Jno. R. Tregloan, trustees.

SOLID SILVER GOLD AND SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 331 Montgomery Street. H. Cox, president; J. J. Applegate, secretary; J. Green, superintendent; R. Hewson, J. J. Applegate, H. J. Booth, H. Cox, J. C. Wilmerding, trustees. Annual meeting, second Tuesday in February. No. of shares, 100,000. No. of feet, 3,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is situated on Cedar Hill, adjoining the Sierra Nevada and Union Consolidated, and consists of a main tunnel or adit about 1,500 feet in length, lapping the center of the hill about 1,200 feet from the top. From this main tunnel branches and crosscuts have been run, aggregating about 750 feet. A winze, recently sunk below the tunnel, is at a depth of 100 feet in very promising ore, and preparations are now being made to crosscut from the bottom of the winze, to tap the ledge recently cut through on the west side of the tunnel.

SOUTH STANDARD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 20, 331 Montgomery Street. Wales L. Palmer, president; C. A. Sankey, secretary; Wales L. Palmer, Israel W. Knox, C. C. Stevenson, C. H. Golding, C. A. Sankey, trustees. Annual meeting, second Thursday in September. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33 $\frac{1}{3}$. No. of assessment, 2. Amount, 25c. per share. Levied, January 11, 1878. Total assessments, \$25,000.

This claim is situated on the Bruce and Burgess lodes, both of which have been demonstrated to possess great value. The property stands clearly in the track of the ore range that here passes through the country, quartz veins, well charged with the precious metals, having been intersected in the crosscuts already run in this ground. The rock bears a strong resemblance to the Comstock ores, gold thus far being the predominant metal. A shaft has been sunk on this ground to a depth of 200 feet, and arrangements perfected for placing steam hoisting works over it, after which sinking will be resumed and prosecuted with energy. The position of this ground, aside from the fine mineral indications obtained, gives it importance, being in line with some of the best claims in the district, and centrally, not over 300 feet, distant from the main workings of the Bodie. The company is made up of good men, the most

of them practical miners, and this property ought to be in favor with the investing public. The miners about Virginia City and Gold Hill, acting under advices from their companions in Bodie, are said to be buying largely into the South Standard, a pretty good guide for those less experienced in these matters.

SOUTH UTAH MINING COMPANY.

VIRGINIA, NEVADA.

Office, 308 Pine Street. H. R. Howell, president; H. H. Howell, secretary; S. Burbridge, superintendent; H. R. Howell, J. G. Jeffress, J. L. Finch, J. W. Clough, F. G. Bouton, trustees. Annual meeting, September 7th. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. Listed on Pacific Stock Exchange.

The South Utah is located about 1,200 feet northerly from the Sierra Nevada, and lies between the Phil Sheridan and the Utah mines. The reversed interest that has lately arisen in the mining properties of this locality has drawn attention to the South Utah, although it is not a new mine. Prospecting began on this property in 1863, and a tunnel has been constructed for a distance of about 400 feet into the hill, near which point two winzes have been sunk to a depth of 100 feet each. Here a fine body of vein matter has been developed which promises well for the future, and prompts energetic work in further effort on the part of the management. All of the surroundings, as well as the results of the labor already expended on the mine, warrant the degree of faith that the company have in their lead. It is in nowise hazardous to predict a bright future for the mine.

SPAULDING GOLD AND SILVER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 117 Battery Street. Wm. A. Searles, president; J. Berolzhime, secretary; A. F. Bryant, superintendent; Wm. A. Searles, Lewis Slessinger, A. F. Bryant, J. Berolzhime, Geo. E. Carter, trustees. Annual meeting, second Tuesday in October. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33 $\frac{1}{3}$. Listed on California Stock Exchange Board and New York Stock Board.

This company has run a shaft nearly 300 feet. Are drifting north and south on the 230-ft. level. Vein well defined, of over five feet. Assays show an average of \$200 per ton. Ground is surveyed, and United States patent applied for. Are now timbering shafts, and will commence sinking during August. The company have a patent windlass for hoisting, as well as one of the best steam hoisting works of the district, erected during the month of August by Hawkins & Cantroll, of San Francisco. Number of miners during August, 15 men. Mine was located by A. F. Bryant, of Bridgeport. Amongst the leading men of the mine, we find the Hon. G. K. Porter, of San Francisco; N. E. Spaulding, Esq., of Boston, Mass.; and the genial young Secretary, Mr. J. Berolzhime, late of Indiana, but now a well-known mining man of California Street. Mr. W. A. Searles, the President of the company, is a worker; and his constant and close attention to the interest of the company cannot help but make the Spaulding one of the leading mines of the district.

ST. LOUIS MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; M. C. Hillyer, superintendent; A. K. P. Harmon, W. S. Hobart, J. D. Fry, C. N. Felton, W. E. Dean, trustees. Annual meeting, first Monday in June. No. of shares, 108,000. No. of feet, 1,200. Shares per foot, 90. No. of assessment, 1. Amount, 15c. Levied, Sept. 20, 1878. Total assessments, \$16,200. Listed on San Francisco Stock and Exchange Board.

STANDARD GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, Nevada Block. Daniel Cook, president; William Willis, secretary; William Irwin, superintendent; Daniel Cook, Monroe Thomson, John F. Boyd, Robert N. Graves, Thomas Bell, trustees. Annual meeting, first Tuesday in June. No. of shares, 108,000. No. of dividend, 12. Amount, \$1. Declared, August 7, 1878. Total dividends, \$600,000. Bullion yield, \$1,278,831.43. Listed on San Francisco Stock and Exchange Board.

This property includes what was formerly known as the Bunker Hill and Bullion claims, both early locations. It was purchased two years ago by Seth and Daniel Cook and John F. Boyd, for the sum of \$67,500. These gentlemen associated themselves with several other prominent mining men and capitalists of San Francisco, and had the property incorporated under its present name, they retaining, as they still do, a controlling interest. Ore extraction, which had before been in progress, was continued by the new company, some 10,000 tons having been taken out by the 1st of April, 1877. This ore was crushed at the Syndicate mill, the company having meantime taken steps for putting up a 20-stamp mill of their own, which was completed and set to work the following Summer. As the ore is much decomposed, this mill reduces from 50 to 75 tons every 24 hours. As a means for transporting ore from the mine to the mill readily at all seasons, the snow falling here pretty deep in the Winter, an elevated wire-cable tramway has been erected between these two points, which has capacity to bring down ore steadily, cheaply and in large quantity. From the ore worked at the Syndicate Mill the company realized in one year sufficient net profits to pay for the mine, build their mill and tramway, and declare a dividend of \$1 per share, leaving them still a surplus of \$40,000 for the purchase of supplies. Dividends at this rate have been kept up monthly ever since, and it is estimated that there is enough ore in sight to enable them to continue the same for two years more at least. The product of bullion turned out at the Syndicate Mill, from April 18th to December 3, 1877, amounted to \$428,000. That turned out at the Standard Mill, from July 20,

1877, when it commenced running, to date (October 1, 1878), amounts to \$1,000,000. This is a tractable gold-bearing ore, easily mined and crushed, and capable of being worked up to 97 per cent. by common pan process. The mine is at the present time being opened and worked through an incline shaft on the line of the lode, this shaft being now about 835 feet in depth. The dip of the lode is to the west, at an angle of about 78 degrees. Drifts have been run on the various levels both north and south, some of them being nearly 800 feet in length. The vein, down to the 450-foot level, has been thoroughly explored, exposing a continuous body of ore over 900 feet long. The incline below this level is also in ore of the usual high grade. The ore in sight, estimated to be worth at least \$60 per ton, amounts to over 50,000 tons. The vein varies from 3 to 15 feet in width, its average width being from 5 to 6 feet. Both walls are regular and show good casings. Everything between the walls is put through the batteries, but owing to the presence of a fine clay in the ore the latter has to be managed with care, a troublesome slum being created. But few chemicals are used here, and the bars of quicksilver is small. The average value of the Standard ore is \$62 per ton. Cost of mining and milling, \$15 per ton. The bullion is worth from \$10 to \$12 per ounce.

In December last the company commenced sinking a vertical three-compartment shaft, at a point 650 feet west of the old incline. This shaft is now down 700 feet, and is being sunk with all possible expedition. Its position is so central to the entire system of lodes that here cross the country, that a very general interest will be felt in its progress and resultant developments. It has already cut a number of ledges, at depths ranging from 112 to 400 feet, all having a slight westerly dip. They have not, as yet, been troubled with much water, either in the new or the old shaft, the entire district being, in fact, remarkable for its dryness.

The Standard Company have a Government title for their mine, the patent covering a tract 1,500 feet long by from 800 to 1,200 feet wide. Since passing under its present ownership, this property presents as good a record as any ever opened on this coast, the remarkable success that has attended operations here, having been due not more to the fine body of gold-bearing ore developed, than to the energetic, but careful and economical management.

The Standard may be regarded as the representative mine of the Bodie district, and is an index to the results that may confidently be expected along the metalliciferous belt which passes through this section of country. This mineral belt is described by Prof. Silliman, as being two and a half miles long north and south, by three-fourths of a mile wide; and that there is in the center of the series of veins, one leading, or mother vein, to which all the others gathered at various depths. The district is rapidly coming into prominence and favor, and now ranks second only to the Comstock, on the Pacific coast.

STEEP HOLLOW GOLD MINING COMPANY.

YOU BET, NEVADA COUNTY, CALIFORNIA.

Office, Room 15, 310 Pine Street. Wm. P. Dewey, president; J. W. Pew, secretary; Wm. P. Dewey, W. B. Murray, Andrew Baird, Jos. Clark, H. A. Fox, trustees. Annual meeting, third Wednesday in September. No. of shares, 10,000. No. of acres, 125.

The Steep Hollow Gold Mining Company, situated on Liberty Hill, in Nevada County, consists of 126 acres of ground on the old "Blue Lead," which extends from Sierra County in the north through Nevada County, and, crossing Bear River, runs through Dutch Flat, Gold Run, etc., in Placer County, and is widely known as one of the richest channels in California. The company's claim runs about 1,700 feet along the course of the channel, with the full width of the same—the rim-rock on both sides being within its boundaries.

The celebrated Swamp Angel claim, on Lowell Hill, about half a mile above this property, and the Little York and Liberty Hill Companies, just below it, and both paying richly, are the best and surest guarantees that the portion of the channel owned by this company will pay handsomely. The tunnel which is being run is one of the largest and best in the county, and, from its favorable position at the lower end of the claim, will serve to work the whole of the property. Plenty of fall for sluices and tailings, water and timber are on the claim, and being within a few miles of Dutch Flat, all supplies can be readily obtained at lowest prices. This claim is what is known as a "drift claim," and the gravel can be extracted at a cost not exceeding fifty cents per car-load, while the receipts will run from one dollar to four dollars per car-load—the gold found in this channel being coarse, and known among miners as "melon-seed" gold.

STEPTOE CONSOLIDATED MINING COMPANY.

WARD, NEVADA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; Robert Briggs, superintendent; C. Gurnee, R. F. Knox, J. E. Damon, J. H. H. Williams, S. N. Putnam, trustees. Annual meeting, last Thursday in August. No. of shares, 100,000. Number of feet, 10,500 (seven miles, 1,500 feet each). No. of assessment, 1. Amount, 10c. per share. Levied, December 14, 1877. Total assessment, \$10,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This company have seven mines, each of them more or less prospected by shaft or tunnels. The Ready Cash has an immense body of carbonate ore perforated by shaft and tunnel. Several thousand tons from this deposit were mined and sold for furnace use. The tunnel in its face shows strong indications of the presence of high-grade milling ore. The assays of the float ore found on this location justify the most sanguine expectations. The Ready Cash has all the characteristics of the Paymaster mine, belonging to the Martin White company, at the same stage of development.

The Light mine adjoins the Paymaster, and has rich ore in its incline, found embedded in the soft manganese seam and clay selvage lying in the line of contact between the limestone and porphyry. This vein is supposed by many miners to be identical with that struck in the Pleiades mine, adjoining the Light. It is also asserted that the Paymaster ore formation runs into the Light ground. The Con. and Emily claims have shafts in which rich mineral appears in bunches, but sufficient depth has not yet been attained to warrant drifting in search of ore bodies. The Fourth of July, Old Ned and Profit mines are located on the line of the strike of the Paymaster and other mines forming the series of the district. The ore found on them seems to have come to the surface in chimneys through a limestone capping. The work done on them presents a fine showing, and there is no reason to doubt finding a fine body of ore by sinking the shafts to greater depth.

STOCK BROKER SILVER MINING COMPANY.

SHOSHONE, WHITE PINE, NEVADA.

Office, 106 Leidesdorff Street. D. L. McDonald, president; O. H. Bogart, secretary; C. S. Benham, superintendent; D. L. McDonald, A. J. Shrader, J. M. Gitchell, O. H. Bogart, J. H. Raymond, trustees. Annual meeting, fourth Monday in October. No. of shares, 100,000. No. of feet, 6,000. No. of assessment, 1. Levied, March 28th, 1876. Total assessment, \$10,000.

SUCCOR MILL AND MINING COMPANY.

GOLD HILL, NEVADA.

Office, 302 Montgomery Street. C. Jones, president; W. H. Watson, secretary; S. B. Segur, superintendent; C. Jones, E. J. Moore, H. Zadig, G. Sutro, trustees. Annual meeting, last Monday in September. No. of shares, 68,400. No. of feet, 5,400. Shares per foot, 12 $\frac{1}{2}$. No. of assessment, 19. Amount, 50c. Levied, Aug. 12th, 1873. Total assessments, \$536,584. No. of dividend, 2. Amount, \$22,800. Declared, October 1st, 1871. Total dividends, \$22,800. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The ground of this company, one of the earliest locations in the neighborhood, consists of a quadrilateral strip, running nearly east and west across Gold Cañon, between the Justice and the Silver Hill claims. The tract is 2,400 feet in length, and covers several ledges besides the principal one known to traverse this section of the Comstock belt, and which is clearly traceable to this point from the outcroppings of the Imperial works. In the early days, the owners of this ground drove in a tunnel, the first run in this part of the district, and stoped out considerable ore, which was milled with profit, that first reduced having been worked with arastras. Afterwards, a mill was erected and kept in successful operation for some time. Still later, steam hoisting works were put up, through the aid of which the ground has been prospected by vertical shaft, levels, crosscuts, winzes, etc., to a depth of about 1,100 feet. Almost from the surface down, vein matter carrying some ore has been encountered, the indications on the lower levels being at present especially encouraging. The work of exploration here has been well planned, and is being carried on with system and thoroughness.

SUMMIT MINING COMPANY.

MINERAL POINT.

Office, Room 6, 318 Pine Street. E. P. Sanford, president; J. W. Clark, secretary; E. P. Sanford, C. Lehmann, J. F. Storer, A. Martin, G. H. Waggoner, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of acres, 320. No. of assessment, 5. Amount, 5c. per share. Levied, Sept. 10, 1878. Total assessments, \$20,000.

The Summit Mining Company own a gravel claim in the Mineral Point Mining District, Plumas County, California, located upon the old river channel, which has in many places proved so valuable mining ground, in Plumas, and other counties. A tunnel has been run about 1,000 feet. Immediate measures are to be taken for prosecuting the work, so as to ascertain the value of the gravel.

SWANSEA MINING COMPANY.

INYO COUNTY, CALIFORNIA.

Office, 315 California Street. F. N. Delaney, secretary; George S. Mani, M. A. Wheeler, Fred. Lux, William H. Garner, B. H. Brooks, trustees. Capital stock, \$5,000,000. No. of shares, 100,000.

The mines of this company are situated at Cerro Gordo. The company have about 6,000 feet of ground, covering the richest and most valuable of the district. Several shafts have been sunk to a depth of 100 feet, and most of them in first-class ore. The works are situated at Swansea, at the foot of the mountains, and on the east side of Owen's Lake, and consist of two Castilian furnaces. The company have recently put in new pans. The developments and operations of the company have been done by the sale of Treasury stock. There has never been any assessments.

SYNDICATE MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 419 California Street. Chas. H. Fish, president; Jacob Stadtfeldt, Jr., secretary; Warren Rose, superintendent; George W. Hopkins, Thomas G. Taylor, H. M. Yerrington, Robert N. Graves, Jacob Stadtfeldt, Jr., trustees. Annual meeting, third Thursday in October. No. of shares, 50,000.

This property, including the Syndicate mill, formerly belonged to a New York company, with S. L. M. Barlow, Prof. Benj. Silliman, and others, as directors, who being unsuccessful, abandoned it, and permitted it to be sold by the sheriff for debts and taxes, and was thus

acquired by the present owners. The Eastern parties have since commenced suit to recover the property, but as they did no work upon the claims for several years, nor claimed title thereto, until the new owners had proved it valuable, there is no chance for them to recover the property. The present owners have run a long tunnel and various crosscuts at great expense, thereby developing valuable ledges. They also repaired and enlarged the mill, and employed it in custom work, having crushed several thousand tons for the Standard, and is at present crushing for the Bodie mine.

TALLAHASSEE MINING COMPANY.

DEVIL'S OATS, LYON COUNTY, NEVADA.

Office, 83 Nevada Block. W. W. Foote, president; Daniel Buck, secretary; W. W. Foote, S. Heydenfeldt, W. M. Stewart, M. Kirkpatrick, A. W. Rose, L. Leavitt, trustees. Annual meeting, last Thursday in November. No. of shares, 50,000. No. of feet, 234x1,000.

TELFAIR MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, Room 12, 511 California Street. T. F. Palmer, president; J. Pentecost, secretary; F. H. Wilder, superintendent; F. F. Palmer, Ira G. Hoitt, James Eva, J. Pentecost, Donville Libby, trustees. Annual meeting, second Tuesday in February. Number of shares, 100,000. No. of feet, 1,500.

TEXADA MARBLE AND COMMERCIAL COMPANY.

TEXADA ISLAND, BRITISH COLUMBIA.

Office, 80 Nevada Block. Gregory P. Harte, president; Daniel Buck, secretary; H. Evelyn Sturt, superintendent; G. P. Harte, Jno. J. Palmer, Jno. H. Boden, R. H. Chinn, Daniel Buck, trustees. Annual meeting, last Friday in July. Number of shares, 100. Extent of property, 160 acres.

TIGER MINING COMPANY.

BRADSHAW DISTRICT, ARIZONA.

Office, San Francisco Stock Exchange. Joseph Clark, president; W. H. Lent, secretary; J. H. Helm, superintendent; Jos. Clark, Geo. B. McAney, Levi Bashford, A. D. Allen, E. O. F. Hastings, trustees. Annual meeting, first Monday in May. No. of shares, 100,000. No. of feet, 12,000. No. of assessment, 1. Amount, 30c. per share. Levied, July 16, 1878. Total assessment, \$30,000. Listed on San Francisco Stock and Exchange Board.

This is an old claim, that has for many years been known to the mining world. For a long time it produced liberally in bullion, and closed for awhile because of an excessive flow of water. A thorough examination of the property resulted in a favorable report, and the present management have started about development in earnest. There is no doubt in the minds of the present owners that in the near future they will be rewarded for their enterprise.

TIOGA CONSOLIDATED MINING COMPANY.

BODIE DISTRICT.

Office, Rooms 2 and 3, San Francisco Stock Exchange. A. J. Ralston, president; W. H. Lent, secretary; W. Rose, superintendent; A. J. Ralston, John F. Boyd, R. N. Graves, W. M. Stewart, J. McAney, trustees. Annual meeting, second Monday in April. No. of shares, 100,000. No. of assessment, 2. Total assessments, \$20,000. Listed on San Francisco Stock and Exchange Board.

This mine is one of the features of Bodie District. It is situated among some of the best locations, and adjoins the Standard on the north. A shaft has been sunk to the depth of 200 feet, and discloses three veins, all gold-bearing. The indications partake of the same properties as the Standard, and there is no doubt, should present indications be verified, that the Tioga will prove one of the most prosperous mines in the district.

TIP TOP MINING COMPANY.

BLACK CANON, PRESCOTT, ARIZONA TERRITORY.

Office, 327 Pine Street. Jos. Clark, president; D. F. Verdenal, secretary; Geo. E. Webber, superintendent; Jos. Clark, Wm. M. Lent, J. B. Haggin, Alex. Forbes, A. E. Head, trustees. No. of shares, 100,000. No. of assessment, 3. Amount, 50c. per share. Levied, July 15, 1878. Total assessments, \$120,000. Listed on San Francisco Stock and Exchange Board.

This company was incorporated September 20th, 1877, and shortly after erected at the mine a ten-stamp mill at considerable expense. The output of silver bullion from February 23d to August 15th, 1878, was a gross approximately of \$154,400, with an interruption of six weeks, during which the mill was stopped for want of water. No further stoppages are anticipated from this cause, water in ample supply having been provided for; and the mine promises to yield ore enough to keep the mill running indefinitely. The expense of running Arizona mines, on account of the distance from the base of supplies, is considerable, and Tip Top is no exception to the rule. The managers are confident, however, of the future success of the enterprise.

TOLO MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, second Thursday in August. No. of shares, 100,000. No. of feet, 603. No. of assessment, 1. Amount, 15c. per share. Levied, November 12, 1877. Total assessments, \$15,000.

TOQUERVILLE SILVER MINING COMPANY.

HARRISBURG, WASHINGTON COUNTY, UTAH.

Office, 310 Pine Street. Louis Janin, president; J. W. Pew, secretary; G. F. Williams, superintendent; Louis Janin, P. S. Van Rensselaer, E. N. Hooper, H. P. Livermore, W. L. Oliver, trustees. Annual meeting, second Wednesday in November. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. No. of assessment, 1. Amount, 10c. per share. Levied, June 23, 1878. Total assessments, \$6,000. Bullion yield, \$9,500.

A striking peculiarity of the Harrisburg Mining District is the occurrence of the ore bodies in two separate "reefs," one on either side of an anticlinal valley. On the west is the "White Reef," on which are the claims of the Leeds and Harrisburg Mining Companies; and on the east is the "East Reef," on which are the claims of the Toquerville Company, and others equally well known. The richest ore of the district has come from this "East Reef." Some shipments from the Toquerville mine have netted over \$1,000 to the ton of ore. The quality of the ore is the same as that on the White Reef, namely, chloride of silver and copper-silver glance. The ore is easily reduced in pans, and yields a high percentage of its contents.

Since the present company has assumed control of the Toquerville mine, it has been entirely self-sustaining, and the receipts continue to exceed the disbursements. The mine is free of indebtedness, and the balance in the treasury is constantly increasing. With ore in sight of a high grade, and with an economical management, there is a strong assurance felt that the Toquerville will soon rank among the best mines of the district.

TORONTO MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 414 California Street. T. W. Colburn, president; Wm. P. Gummer, secretary; N. D. Thayer, Isaac R. Hall, J. P. Gilman, J. W. Brown, T. W. Colburn, directors. Annual meeting, in November. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

The Toronto is an old claim, which was originally located in 1861, but, like most other Bodie claims, was abandoned until recent developments again turned capital toward Bodie. The mine is on the Burgess ledge, southwest of Bodie, and is adjacent to the Spaulding mine, which has recently developed some very rich rock.

TROJAN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 21, 323 Montgomery Street. John Turner, president; David Wilder, secretary; Albert Lackey, superintendent; John Turner, P. Connolly, Sidney M. Smith, J. H. Jessen, John W. Rowe, trustees. Annual meeting, third Friday in February. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 8. Amount, \$25,000. Levied, June 4, 1878. Total assessments, \$215,000. Bullion yield (to June 30, '78), \$71,200.67. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Trojan is located west of the Overman, and south of the Belcher mine. The hoisting works are ample for all purposes, conveniently arranged, and well constructed. The main hoisting works are 31x47 feet; blacksmith shop, 16x30; boiler-house, 16x30; and wood-house. From the hoisting works a track leads to two ore houses; one, of a capacity of 300 tons, over the track of the Virginia and Truckee Railroad; the other, of a capacity of 200 tons, facing the wagon road. The machinery consists of a 40 horse-power engine (12-inch cylinders, 24-inch stroke), pump for supplying the boiler and other uses; two reels, main shafting, etc., with ample power to sink to a depth of 800 to 1,000 feet. The reels are supplied with two cables of 800 feet each, 4x $\frac{1}{2}$ -inch, and a good gallows frame. The boiler is 16 feet in length, 54 inches diameter, containing 42 3-inch tubes. The shaft is in two compartments, each 4x4 $\frac{1}{2}$ feet, well timbered, with 12x12 timber, and 400 feet in depth. Work is being done from second, third, and fourth stations, drifts north and south, from 100 to 300 feet, having been run from each station, the entire length of drifts being in the vein, with frequent crosscuts. All the different levels are connected by winzes, giving a good circulation of air throughout the mine. At present (August, 1878), good ore is being taken from all three stations, and shipped to the Vivian Mill, on the Carson river. There is a large amount of ground to prospect on the lower levels, and the vein is of a very promising character, and from present indications, will give a large yield of ore. Since March 1, 1878, the shaft has been sunk from the third to the fourth station, and there will be no need to sink deeper for some time to come. There are two pumps Cope & Maxwell, which handle the water with ease.

TWIN PEAKS MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 414 California Street. Isaac R. Hall, president; William P. Gummer, secretary; I. R. Hall, J. W. Stetson, J. W. Brown, G. J. Binder, J. S. Gregory, trustees. Annual meeting, in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 1. Amount, 15c. Levied, February 26th, 1878. Total assessment, \$15,000.

The Twin Peaks is located on the Crevice ledge, which runs through by the Imperial works and along the line of the big crevice east of Gold Hill, opened by an earthquake four years ago last Christmas, and which crops to the surface along south, and is being opened up by the Alta, Succor, etc. The developments made are of the most encouraging character. The old one-compartment shaft cut the ledge 40 feet from the surface, and at 60 feet brought to light some as fine ore as was ever found on the Comstock at that depth. The ore has the open, porous appearance which characterizes that taken from large ore bodies, and is composed of sulphurets

and chlorides of unusual richness. It having been deemed advisable to cut the ledge at greater depth, the work on this shaft has been stopped, and a new three-compartment shaft, started a few months ago, has attained about 100 feet in depth, and will be pushed forward with dispatch.

TIMACACORI MINING COMPANY.

ARIVACA AND ORO BLANCO, PIMA COUNTY, ARIZONA.

George W. Deitzler, president; William A. Andoe, secretary; George W. Deitzler, James P. Preston, William O. Gould, James H. Van Vleet, William A. Andoe, trustees. No. of shares, 100,000.

TYBO CONSOLIDATED MINING COMPANY.

TYBO, NYE COUNTY, NEVADA.

Office, Room 7, Safe Deposit Building. Arthur K. Hawkins, president; William W. Parrish, secretary; A. K. Hawkins, superintendent; Vincent Neall, Theodore H. Hittell, Morton C. Fisher, Camilo Martin, Arthur K. Hawkins, trustees. Annual meeting, first Wednesday in June. No. of shares, 50,000. Bullion yield, \$2,500,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Tybo Con. Mining Company now comprises the following claims: The La Fayette, 1,200 feet; the Two G., 1,125 feet; the Casket, 650 feet; the Crosby, 800 feet; the Hunki Dori, 800 feet; and the Bunker Hill, 1,500 feet. These claims have been variously prospected to the depth of 1,000 feet, and ore has been stopped out on every level. The yield averages from \$50,000 to \$100,000 per month in bullion. The company have two furnaces of a capacity of 150 tons per day, and have just completed new hoisting works and placed therein \$25,000 machinery. They employ about 250 men, and are expending monthly from \$45,000 to \$70,000 in the development of their property. At the inauguration of this enterprise the Tybo Company adopted the wise policy of securing for future use a number of metaliferous lodes, situated near each other, to the end that their reduction works might never suffer from an inadequate supply of ore, inasmuch as some one or more of these lodes, all of which have been extensively prospected, would be likely to be in bonanza, furnishing the requisite working stock, should others, for the time being, fail to do so. As yet no such emergency has occurred, the Two G. and the La Fayette having furnished ore enough to keep their mill in part and their furnaces wholly employed, neither of these mines having as yet been explored to any great depth, nor have they been worked in a way rapidly exhaustive of present ore reserves.

UNCLE SAM MINING COMPANY.

TOMBSTONE, ARIZONA.

Office, 320 California Street. No. of shares, 100,000. No. of feet, 1,500.

This mine, though a recent discovery, is situated in a region of country rendered classical by the early Spanish explorations made in this part of Arizona. The Tombstone District, so named because of the peculiar manner in which the rocks there project above the ground, is distant about 76 miles, in a southeasterly direction from the town of Tucson, from which place it can be reached by a good wagon road at all seasons of the year. The lode on which this mine is located is of large size and of well-defined outlines. It has a northerly and southerly strike, with an easterly inclination. The matrix is quartz well charged with silver. The ore is of high grade, much of it assaying from \$1,000 to \$2,500 per ton in silver, with about \$30 in gold, and it is probable that the entire body of ore available for reduction will yield over \$200 per ton, a number of tons sent to San Francisco having greatly exceeded this amount. It is a fine, clean ore and can be worked closely at small cost. At present the company is shipping the ore taken from the mine, but they will ultimately reduce it at works put up for the purpose on the San Pedro River, where they own a superior mill site, only four miles from the mine. Besides an abundance of water, furnished by this river, the district is well supplied with wood of different kinds, the climate here being healthful and the other natural advantages exceptionally good, wherefore, this property may justly be considered one of great prospective value.

UNION CONSOLIDATED SILVER MINING COMPANY.

VIROINIA, STOREY COUNTY, NEVADA.

Office, Room 4, 309 California Street. Robert Sherwood, president; J. M. Buffington, secretary; W. H. Patton, superintendent; Robert Sherwood, Geo. Wallace, Geo. R. Wells, J. W. Coleman, Cornelius O'Connor, trustees. Annual meeting, third Monday in July. No. of shares, 100,000. No. of feet, 825. No. of assessment, 11 Amount, 25c. per share. Levied, April 10, 1878. Total assessments, \$290,000. Listed on San Francisco Stock and Exchange Board.

The Union Consolidated mine has had a peculiar experience, and to-day occupies a place high in popular favor; in fact, its stock is only second on the list. After years of doubtful record, three years since it assumed a positive attitude, so far as title was concerned, and fell back upon its intrinsic merit for claims upon popular favor. A patent for 825 feet on the Comstock was secured, and active work at development began. The claim is located between the Mexican and the Sierra Nevada, and developments have shown that its richness is beyond doubt extensive. From the 1,300-ft. to the 1,600-ft. level, everything has proved satisfactory as work has progressed, and progress is being made toward a connection with the Sierra Nevada mine, as well as in the joint east crosscut on the Mexican north line. At a distance of 620 feet, the face of the north drift was in porphyry and clay. Here heat was encountered to a high degree, but the winze has been prosecuted to connect with the north drift on the 1,700-ft.

level. This winze will occupy a very important position, and has enabled the prospecting and opening up of a large portion of entirely virgin ground, and will greatly aid the ventilation of both the Mexican and Union Con. mines. The north-east drift, running to connect with the North Con. Virginia shaft, is making good headway, the face in clay and porphyry carrying occasional streaks of good quartz. The latest reports from the mine show satisfactory results, and the management is determined to spare no efforts to place the mine among the most renowned of the Comstock properties. If the possession of a good mine, an abundance of capital, and a determination to produce a complete development, are a guarantee for success, there can be no doubt as to the future of the Union Consolidated Company.

UNION CONSOLIDATED MINING COMPANY OF CERRO GORDO.

INYO COUNTY, CALIFORNIA.

Office, 402 Front Street. Egbert Judson, president; T. M. Converse, secretary; Mortimer W. Belsaw, superintendent; E. Judson, B. S. Brooks, M. W. Belshaw, I. L. Jones, M. Allison Wheeler, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of assessments, 1. Amount, \$1.25. Levied, July 1, 1878. Total assessments, \$125,000.

UNION FLAG SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 17, 419 California Street. A. H. Yeazell, president; W. H. Allen, secretary; A. H. Yeazell, Chas. H. Aitken, N. Gimboni, John Bayle, H. Bredhoff, trustees. Annual meeting, February 13th. No. of shares, 100,000. No. of assessment, 1. Amount, 10 cents. Listed on California Stock Exchange Board.

UNION WEST MINING COMPANY.

PIONEER, ARIZONA.

Office, 320 California Street. Amos Roberts, president; Edwin B. Boothe, secretary; M. A. Baldwin, superintendent; Amos Roberts, Wm. H. Boothe, L. T. Carr, E. Wolfskill, B. A. Barney, trustees. Annual meeting, first Wednesday in June. No. of shares, 100,000. No. of feet, 1,500.

This claim, which is situated about half a mile northwest of the Silver King mine, ranks among the early locations made in the Pioneer District. The company is a San Francisco incorporation, and the property is being opened in fine style. The old shaft, now 60 feet deep, has been retimbered and is in good order. This shaft is in ore of a mixed character, some being of high and some of low grade, its entire length. The claim comprises 1,500 feet on the ledge. Some very rich antimonial silver ore has been taken out here, portions of it assaying as high as \$2,800 per ton. The great body of the workable ore will yield at the rate of \$300 per ton, the very lowest grade yielding about \$40. A few tons of ore have been extracted of extreme richness, besides some 20 tons of second-class, worth about \$100 per ton. The ledge on the surface is from 3 to 4 feet thick and much broken up, but widens out and becomes more compact below. Work here is in progress and will go on without intermission.

UNIVERSITY GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 13, Safe Deposit Building. R. G. Brown, president; William Letts Oliver, secretary; Lee H. Newton, superintendent; N. K. Masten, G. W. Beaver, Dwight Crittenden, H. M. Yerrington, R. G. Brown, trustees. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

This mine is situated on the northwesterly slope of Queen Bee Hill, adjoining the Old Dan and Booker mines. A vertical shaft has been sunk on the ground to a depth of 100 feet. At a point half way down this shaft a drift was run a distance of 40 feet on the ledge, here nearly four feet wide and composed wholly of good ore. This ore, which was formerly worked quite extensively, yielded between \$30 and \$40 per ton, being equal to any ever found in the district at no greater depth. At a depth of 100 feet further drifting will be done, the shaft being meantime continued downward. Very soon another shaft will be started 300 feet south of the present one. These shafts will be connected below, insuring good ventilation and establishing considerable ore reserves in the mine. No trouble will be experienced here from water, this mine being drained by those lying further down the hill. The company have set aside 15,000 shares of this stock, to be disposed of for raising a working capital, and which, as it well deserves to do, is meeting with ready purchasers.

UTICA CONSOLIDATED MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel; A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, W. B. Thornburgh, R. N. Graves, John Skae, W. E. Dean, trustees. Annual meeting, second Wednesday in January. No. of shares, 45,000. No. of feet, 15,000. Shares per foot, 30.

The Utica Con. lies next north of the Orleans or the Old Van Bokkelen and Thornburgh, on a line with the Sutro, and separated therefrom by the Orleans. It is a west ledge location.

UTAH SILVER MINING COMPANY.

VIRGINIA CITY, NEVADA.

Office, Room 25, Nevada Block. R. H. Follis, president; Geo. C. Pratt, secretary; W. B. Sheppard, superintendent; John Skae, Geo. Wallace, R. H. Follis, trustees. Annual meeting, second Tuesday in July. No. of shares, 20,000. No. of feet, 1,000. No. of assessment, 21. Amount, \$2. Levied, August 15, 1878. Total assessments, \$620,000. Listed on San Francisco Stock and Exchange Board.

The Utah lies north of the Sierra Nevada. It was located in 1859, but the company owning it re-incorporated in 1871, since which date the work of development has been steadily

prosecuted. The old company had sunk a shaft on the croppings of the ledge to a depth of 280 feet, from which they obtained some good ore. The present company, better informed by experience, in 1871, commenced sinking a new shaft 200 feet further east than the old one. This new shaft, at latest date (21st September, 1878), had reached a depth of nearly 1,500 feet, and is being rapidly pushed to reach the lowest level of the bonanza mines. Several lateral drifts have been made. The northeast drift, on the 1,150 feet level, had reached a distance of 361 feet on 31st of August, 1878. On the 1,350-foot level, the south lateral drift connects with the works in the Sierra Nevada, after running 885 feet, and secures good ventilation on the lower levels. On the 400-foot level a crosscut on the lode showed it to be 165 feet wide, and of the same character of ore as the other mines on the Comstock lode. At a depth of 650 feet the lode was again crosscut, with similar results to that above. The works and machinery of the company are nearly all new and of the most approved description, and are abundantly sufficient to develop the mine to a depth of 2,500 feet.

VANCOUVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, second Wednesday in August. No. of shares, 100,000. No. of feet, 571. No. of assessment, 1. Amount, 10c. Levied, August 8th, 1877. Total assessment, \$10,000.

This company is one of the series organized on the original Joe Scates Consolidated ground, and the location is directly east of and adjoining the Savage mine. The Sutro tunnel passes through the claim, having cut a ledge 60 feet wide in the company's ground, at a depth of about 1,650 feet. The mine will be developed by means of this tunnel.

VERMONT CONSOLIDATED MINING COMPANY.

VIRGINIA, STOREY COUNTY NEVADA.

Office, 306 Pine Street. E. R. Warsaw, president; H. H. Johnston, vice-president; E. F. Stone, secretary; Henry Snell, superintendent; E. R. Warsaw, J. E. Shawhan, H. H. Johnston, I. P. Rankin, S. D. Woods, trustees. No. of shares, 110,000. No. of feet, 1,300. Shares per foot, 84 8-13. Annual meeting, first Thursday in August.

The ground of this company, which was incorporated August 1, 1876, lies east of the Ophir and Mexican mines. The oldest of the claims now belonging to the company is the Vermont, recorded on the 16th day of December, 1859, in Book A of Virginia Records. Several locations under this organization have been united, and the title thereto secured by United States patent. The company has hoisting works complete for sinking the shaft, already down 200 feet, to a depth of 1,000 feet or more. This shaft has been in vein matter nearly all the way from the surface down. The formations, lay of the grounds, croppings northeast of the shaft, and all surroundings, justify the expectation of finding a chimney of quartz nearer the surface than has yet been found in any of the adjoining mines. The Ophir ore-body, developed on the 2,000-foot level of that mine, is known to lie immediately adjoining, if not chiefly, in the Vermont on the west, and the more recent "find" in the Union and Sierra Nevada is almost, if not quite, as near the Vermont property on the north. California has an ore-body adjoining on the southeast. In view of the fact, that three ore bodies are being uncovered adjoining the Vermont, on the south, west and north respectively, it would be strange, indeed, if the shaft of this company should fail to show ore, going down as it does in the center of such surroundings. The sinking of this shaft is at present attracting more attention than that of any other company on the Comstock, and it is believed, by almost all of the old Comstockers, that the croppings on this ground will yet prove to be the surface exposure of an immense ore chimney lying chiefly within its limits, and at present being uncovered by adjoining properties at a depth of 2,000 feet or more.

The Vermont shaft is being driven down as rapidly as possible, and so confident is the management of finding pay ore in a short time, that provision has been made for money, without calling on the shareholders by assessments for the current expenses of the mine. With the general improvement in the mining share market, occasioned by developments immediately contiguous to the Vermont, this property, embracing 1,300 feet, running southwest and northeast, by 600 feet east and west, must inevitably attract purchasers, offering, as it does, the chance of a fortune, through an investment of only a few hundred dollars, the stock of the company now selling in the open market at about \$5 per share. But for the general depression prevailing almost everywhere in business channels for several years, and especially on the Comstock for two years past, this property would have been developed long since, for at no time have the chief owners thereof doubted the certainty of developing here an immense ore body, whenever the company should determine to explore their ground. Having at last entered vigorously on this work, great activity, with advancing prices in this stock, may be counted on in the early future, the appreciation that has already taken place being but the prelude to that which may be expected to follow.

VENTURE MINING COMPANY.

TUSCARORA, BLAKE COUNTY, NEVADA.

Office, Room 26, 419 California Street. W. H. Reed, president; Jacob Stadfeld, Jr., secretary; J. C. Lennon, superintendent; W. H. Reed, W. C. Hendree, N. F. Bean, Robt. Sherwood, John McNally, trustees. No. of shares, 100,000.

VICTORIA CONSOLIDATED GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, third Monday in December. No. of shares, 100,000. No. of feet, 650. Shares per foot, 154.

The Victoria Consolidated holds the north end of the Red and White Cross lode, and lies east of the North Consolidated Virginia, and north of the Plutus,

VICTORIA AND IMPERIAL TUNNEL AND MINING COMPANY.

LITTLE COTTONWOOD, UTAH.

Office, 302 Montgomery Street. C. Jones, president; W. H. Watson, secretary; S. W. Blakely, superintendent; M. Saulsbury, C. P. Robinson, S. W. Blakely, W. H. Watson, C. Jones, trustees. Annual meeting, second Thursday in September. No. of shares, 60,000. No. of feet, 500. Shares per foot, 120. No. of dividend, 1.

VICTOR MILL AND MINING COMPANY.

COLUMBUS, ESMEERALDA COUNTY, NEVADA.

Office, San Francisco Stock Exchange. H. L. Coye, president; Chs. Land, vice-president; Victor Fernbach, secretary; A. J. Rhodes, superintendent; H. L. Coye, Chs. Land, R. H. Lloyd, Samuel Grosh, A. J. Rhodes, trustees. Annual meeting, third Tuesday in January. No. of shares, 50,000. No. of assessment, 1. Amount, 20c. Levied, March 29, 1877. Total assessment, \$10,000.

The Victor is composed of three separate locations—the Victor, 1,400 feet, the Magnet, 1,000 feet, and the Chloride, 1,000 feet, running in a northeasterly and southwesterly direction, dipping northeast, and about one-third of a mile from the Northern Belle, on the same ledge. The mine is opened by a tunnel 700 feet, in which it cut a ledge twenty feet wide. Drifts have been run east and west about 250 feet, and all the way in ore. Raise in east drift 190 feet in good milling ore. Winze in east drift 150 feet deep, in good ore. The ore assays from \$50 to \$1,175 per ton, averaging about \$65 per ton. There are over 4,000 tons of milling ore on the dump.

VIVIAN CONSOLIDATED GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. Shares per foot, 135. No. of feet, 740.

The Vivian Consolidated is the second claim on the Vivian and San Fernando lode, lying to the south and east of the Florida. The location covers two ledges about twenty feet apart, which, while similar in their ore-bearing properties, are distinct in other and distinguishing characteristics. These ledges are, respectively, 300 and 200 feet in width, and yield liberal assays, both in their croppings and where cut by the tunnel run into the ground in early years. A large three-compartment, combination working shaft is being sunk on the line dividing this claim from that of the San Fernando company. The expense of development is equally apportioned between the two companies.

VIVIAN MINING COMPANY.

DEVIL'S GATE, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, J. D. Fry, R. F. Morrow, A. M. Edgington, D. L. Bliss, trustees. Annual meeting, second Wednesday in December. No. of shares, 50,000. No. of feet, 1,600. Shares per foot, 31½.

WARD GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 26, 419 California Street. Thomas Cole, president; Jacob Studtfield, Jr., secretary; F. M. Thayer, superintendent; J. M. Livingston, Thomas Cole, C. W. Kellogg, W. C. Parker, J. C. Palmer, trustees. Annual meeting, fourth Thursday in March. No. of shares, 110,000. No. of assessment, 2. Amount, 30c. per share. Levied, September 13, 1878. Total assessment, \$66,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Ward is located south of and adjoining the Julia and east of the Bullion. That it is on the same ledge as the Julia has been demonstrated by a drift into its ground from the 1,600-foot station of that mine, which is near the line and which has followed a broad, well-defined ledge of quartz the entire distance. The drift run south on the 1,800-foot level of the Julia also proves conclusively this fact. A four-compartment well-timbered vertical shaft has been put down on this ground to a depth of 1,400 feet, the work being still in active progress. In view of the excellent prospect of this mine the company have determined upon the erection of new and first-class hoisting works, to which end an early but by no means onerous assessment has become necessary. Only one call of this kind has as yet been made on the Ward stockholders, and that only for the small amount of 30 cents per share, a fact that sufficiently endorses the economy of the management. As the ore body alluded to in the Julia mine is situated near the north boundary of the Ward ground there can be little doubt but it will pass in great strength into the latter, the same favorable indications having been met with here that abounded in the Julia.

WATT BLUE GRAVEL MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, 414 California Street. Geo. W. Beaver, president; R. Wegener, secretary; William Watt, superintendent; Geo. W. Beaver, Robt. Watt, F. Berton, A. B. Dibble, William Watt, trustees. Annual meeting, third Monday in February. No. of shares, 100,000. No. of acres, 900. No. of assessments, 3. Amount, 10c. per share. Levied, Sept. 6, 1878. Total assessments, \$35,000.

WEBFOOT SILVER MINING COMPANY.

PIONEER DISTRICT, PINAL COUNTY, ARIZONA.

Office, Room 47, 330 Pine Street. John F. Snow, president; W. Meeks, secretary; John Dore, superintendent. John F. Snow, H. Rosekrans, A. J. Miller, W. Meeks, Jno. Dore, trustees. Annual meeting, third Wednesday in December. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 60¢.

The Webfoot is situated in Pioneer Mining District, Pinal County, Arizona, in the foot-hills of the western slope of the Pinal range of mountains. The width of the vein is from eight to ten feet on the surface, and traceable the whole length of the claim, with hanging walls of granite and porphyry, and foot-walls of quartzite, with some traces of lime and clay seams. Two shafts have been sunk on the ledge 18x35 feet, and a tunnel 4x6 feet has been run in 80 feet, from which fine carbonates of silver has been taken, from which 10 assays averaged \$319.50 in silver. It is not the intention of the company to levy any assessments, and have therefore set aside 20,000 shares for expenses and working the mine. There is at present about 75 tons of ore on the dump, that will nett \$6,000, which is about the amount already expended on the mine, and which is now free from debt. The company are now engaged in taking the ore to one of the mills about a mile from the mine, where it can be crushed and concentrated for \$20 per ton.

WELLS FARGO MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 309 California Street. D. M. Seaton, president; W. M. Hellman, secretary; D. M. Seaton, A. J. Adams, Geo. W. Dixon, Geo. McConnell, Geo. R. Perrin, trustees. Annual meeting, last Thursday in January. No. of shares, 103,000. No. of feet, 1,500. No. of assessment, 11. Amount, 50c. per share. Levied, September 11, 1878. Total assessments, \$225,800. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This is one of the oldest locations in the mining section known as North Virginia. It is situated a little less than a mile in a direct line to the eastward from the original locations on the Comstock. Formations similar to those on the Comstock are plainly traced across the dividing cañon, and are found in North Virginia. The situation of the Wells Fargo is directly east of the Utah, Sierra Nevada, etc. A shaft has been sunk that cuts through a large ledge of promising vein matter, from which liberal assays have been made. Hoisting works have been erected, with machinery sufficient to conduct operations 1,200 feet down, at least.

WESTERN UNION MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 80, Nevada Block. M. E. Spurling, president; Daniel Buck, secretary; Wm. T. Robinson, superintendent; M. E. Spurling, R. H. Sinton, Holland Smith, W. T. Robinson, John O'Brien, trustees. Annual meeting, last Thursday in January. No. of shares, 60,000. No. of feet, 1,500x600.

WHITE CLOUD MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 25, Nevada Block. Charles H. Fish, president; George C. Pratt, secretary; S. W. Blasdel, superintendent; Charles H. Fish, W. H. Osgood, H. G. Blasdel, George C. Wickware, Annis Merrill, trustees. Annual meeting, second Monday in January. No. of shares, 60,000.

This mine adjoins the Red Cloud on the east. It was located January 26, 1878, and the work of prospecting has been carried on continuously ever since. It has a shaft about 50 feet deep, with several lateral drifts. The company has expended nearly \$10,000 in work and materials. It will be necessary to erect pumping machinery at once as the water already impedes operations.

WILLIAM PENN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 20, Safe Deposit Building. Almarin B. Paul, president; J. N. White, secretary; George Langridge, superintendent; Almarin B. Paul, W. Seawell, E. Chequette, George Langridge, J. S. Adams, trustees. Annual meeting, third Wednesday in February. No. of shares, 100,000. No. of feet, three claims, 2,500 feet. Shares per foot, 40. No. of assessment, 3. Expended on mine, \$25,000. Listed on Pacific Stock Exchange and California Stock Exchange Board.

The Wm. Penn mine is located on what may be termed the lower Comstock mineral belt, being in line and near by the Alta, Sueker, Niagara and other prominent mineral deposits of the lower Comstock range. It is one of the oldest locations in the vicinity. The lode shows here an immense surface exposure, indicative of great power below, everything giving promise of a valuable mining property. This company have now a tunnel 900 feet in length, which will strike the lode somewhere near 500 feet below the croppings. The work of development is being actively prosecuted, and will so continue to be until determinate results are reached.

WOODVILLE CONSOLIDATED SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 2, 419 California Street. J. P. Cavallier, president; R. E. Kelly, secretary; S. F. Curtis, superintendent; J. P. Cavallier, R. H. Lloyd, H. Borland, R. Sherwood, J. H. Dobinson, trustees. Annual meeting, first Monday in May. No. of shares, 120,000. No. of feet, 1,300. Shares per foot, 92½. No. of assessment, 6. Amount, \$30,000. Levied, January 23, 1878. Total assessments, \$630,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

YELLOW JACKET SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Gold Hill, Nevada. George A. King, president; Mercer Otey, secretary; T. G. Taylor, superintendent; George A. King, James G. Fair, F. A. Tritle, George Wallace, T. G. Taylor, trustees. Annual meeting, third Monday in July. No. of shares, 120,000. No. of feet, 957. Shares per foot, 125 125-319. No. of assessment, 30. Amount, \$1 per share. Levied, Sept. 12, 1878. Total assessments, \$3,793,000. No. of dividend, 25. Amount, \$2.50 per share. Declared, August 5, 1871. Total dividends, \$2,184,000. Bullion yield, \$14,372,172. Listed on San Francisco Stock and Exchange Board. Transfer office, Room 10, Cosmopolitan Hotel. James Newlands, transfer secretary.

The Yellow Jacket is exclusively a Nevada incorporation. The claim was the first one located in Gold Hill, and was made in the early Spring of 1859, by John Bishop and a man named Camp. Subsequently others were added, and the name of the original location given to the whole. The name Yellow Jacket was given to the first location because the locators ran across a nest of yellow jacket wasps when making it. The mine lies next north of the Kentuck, by which it is separated from the Crown Point, and south of the Challenge, which lies between it and the Imperial Consolidated. The Yellow Jacket has been a prominent bullion producer, as the amount set down in the above statement shows. Not, however, since the exhaustion of the ore body discovered between the 1,740 and the 1,940 levels, now over a year ago, has much ore been taken from the mine, the more recent efforts of the company having been directed mainly to the prosecution of that deep and thorough exploration that the mines situated on the great Washoe channel justify and require. To this end they have devoted their financial energies, having projected this work on a grand and systematic scale. In pursuance of this policy, while continuing vertical as well as lateral explorations on the vein through their old works, they have driven downward an immense working shaft, situated far to the east, and through which hoisting, pumping, and all other operations will in the near future be carried on. The principal exploratory work done here of late, may be summarized as follows:

In the old shaft a winze has been put down from the 2,200 to the 2,400-foot level, and a station opened on the latter. On 2,200 level run drift east from this winze 873 feet, to a point 2,230 feet vertically below the collar of the new shaft. Drift all in vein matter. Have also drifted north and connected with the Cou. Imperial for ventilation. On the north line, this level, run crosscut east 252 feet, and west 116 feet. Both drifts nearly all in favorable quartz. Also drifted south from winze 327 feet, and made drifts west and east, all in quartz favorable to ore. On 2,000 level drifted north from south winze 323 feet, and connected with drift run by Crown Point company from their incline.

On the 1,740-foot level a dam has been built for the retention of a heavy flow of hot water, which would otherwise have to be pumped out at a considerable expense daily. Work at the old shaft has latterly been suspended, with the exception of running air compressor for north winze below 2,000 level, from which Crown Point raises waste matter, men, tools, etc., for \$1.25 per ton. From old mine two miners' inches of water come in, which is passed to the Belcher pumps at a cost of \$500 per month. All expenses at old shaft do not exceed \$6,000 per month. In all work from this shaft there have been sunk 421 feet of working winzes, and 2,500 feet of drifts run. Mine cool all through.

THE NEW SHAFT AND ITS APPURTENANCES.—Convinced of the utility of larger shafts for deep exploration, the Yellow Jacket company secured in good time a suitable site for a work of this kind, locating the same so far to the east that their lode would not be intersected until a considerable depth was attained. This shaft has been planned on a large scale, comprising the unusual number of five compartments, all of extra size, two being designed for hoisting purposes. Its four working compartments are each 5 feet by 6½, and the pump compartment 6½ by 7½. This shaft has now reached a vertical depth of about 1,800 feet, and will be pushed downward with all possible expedition. That it has been substantially timbered and otherwise protected in the most thorough manner, it is superfluous to say.

The hoisting and pumping machinery connected with this shaft are the most ponderous, powerful and perfect yet put up on the Comstock, and are not perhaps surpassed by any similar works elsewhere to be found. The receipts of the Yellow Jacket during the past year, derived, of course, mainly from assessments, have amounted to \$846,522.65, their aggregated disbursements having been the same. Among leading items of expenditure have been, for machinery, transportation, supplies, labor, etc., on account of the new shaft, \$535,749.89. For labor on the old works, \$68,765.75, have been expended; for wood, \$34,791.62; and for mine supplies, \$25,669.60, the balance of expenditure being made up of diverse minor items.

YOUNG AMERICA MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. F. F. Coffin, president; R. H. Brown, secretary; F. F. Coffin, J. W. Hussey, Jacob Schleicher, P. Kitz, Wm. A. Weed, trustees. Annual meeting, fourth Tuesday in June. No.

of shares, 60,000. No. of feet, 1,000. Shares per foot, 60. No. of assessment, 10. Amount, 20 cents. Levied, June 27, 1878. Total assessments, \$94,500. Bullion yield, \$9,463.09. Listed on San Francisco Stock and Exchange Board.

YOUNG AMERICA SOUTH MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. W. Hussey, president; R. H. Brown, secretary; George Seitz, superintendent; J. W. Hussey, O. C. Mendell, Geo. Seitz, Geo. O'Briter, F. F. Coffin, trustees. Annual meeting, fourth Monday in June. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

MINES RECEIVED TOO LATE FOR CLASSIFICATION.

ETNA MINING COMPANY.

GLOBE DISTRICT, PINAL COUNTY, ARIZONA.

Office, Room 12, 420 Montgomery Street. E. B. Jogo, president; A. F. McGrew, secretary; D. Tomkinson, A. F. McGrew, H. Searle, E. B. Jogo, L. W. Iolt, trustees. Annual meeting, March 23. No. of shares, 100,000. No. of feet, 1,500 by 600. Listed on California Stock Exchange Board.

AMADOR GRAVEL MINING COMPANY.

AMADOR COUNTY.

Office, 424 Montgomery Street. Samuel Hubbard, president; Morris Speyer, vice-president; W. A. Lawson, secretary; W. H. Taylor, treasurer; Samuel Hubbard, Morris Speyer, W. H. Taylor, W. B. Cummings, trustees. f. Bluxome, superintendent. Annual meeting, first Monday in September. No. of shares, 100,000.

The property of this company is located about two miles from Jackson, Amador County, California, and comprises 270 acres of placer mining ground, with a title secured by U. S. patent. It contains one of the deepest deposits of gravel in the State, and is being worked in the interest of the owners solely, hence is not listed on either of the Stock Boards. The location of the ground is highly favorable for cheap and rapid working. The work is prosecuted from the surface down to the bed-rock, without any outlay for deep shafts and costly tunnels. Extensive prospecting has been done, and excellent indications obtained. The working machinery consists of 11 and 15-inch pipe, carrying 350 inches of water, 3 $\frac{3}{4}$ miles of ditch, with flume, etc. The water is drawn from the Blue Lakes, through the Amador Canal, and the cost is moderate, not to exceed eight cents per inch. There are no debts, and the mine is expected to pay from the start. To meet any possible emergency, 10,000 shares of capital stock have been reserved. The property above alluded to, was formerly known as "The Moon Mining Claim," and has been thoroughly examined by a number of competent experts. A letter from J. H. Reed, dated October 3, 1878, says: "I find an evident river channel, with every prospect of a lasting claim, that will warrant expenditure of money for full development." Mr. N. G. Young, an accomplished expert, says: "The claim is the largest and best fitted up in Amador County, and the facilities for working are excellent. I have been mining since 1852, in different parts of the country, and as yet have not seen any better or more extensive showing in any one mine." He also remarks that "2,000 inches of water can be brought on the mine throughout eight months in the year, which is one more advantage in so extensive a mining claim, that few possess. The outlook is splendid throughout. A tunnel has been run in about 40 feet, and with the use of a pan, will show from 10 to 30 colors to pan." Any number of favorable reports may be seen at the office of the company.

ATLANTA MINING COMPANY.

SILVER HILL, WEST TINTIC, UTAH.

Office, 420 Montgomery Street. A. H. Noon, president; A. F. McGrew, secretary; A. A. Noon, superintendent. A. H. Noon, A. F. McGrew, Antonio P. Troy, Charles Atherton, Lewis Smith, trustees. Annual meeting, April 5. No. of shares, 100,000. No. of feet, 1,500. Listed on California Stock Exchange Board.

The mine belonging to this company is the original "Noon" lode, situated on the ridge of Silver Hill, Oquirrh Range, West Tintic Mining District, Juab County, Utah. It is easily accessible, and wagons can be driven to the mouth of the shaft. Wood and water are plentiful in its neighborhood. At the 50-foot level the walls are about 11 feet apart; the shaft vertical that distance, pitches slightly to the west below that level, so far as yet developed. The ores of this mine have a remarkable resemblance to the celebrated Ontario ores, the same mineralogical specialties, and peculiar colorings, and appearance of the quartz, like that mine too. Its character as a true fissure vein is indicated by the well-defined foot and hanging walls; the country rock is quartzite and granite. There can be no question but that this mine is the mother-lode of Silver Hill, and will develop into a large mine of permanent character and great value. The company own a good mill site and water-power, but the custom mills of East Tintic are sufficiently convenient for present use.

BATEMAN GOLD AND SILVER MINING COMPANY.

VIRGINIA, STORRY COUNTY, NEVADA.

Office, 106 Leidesdorff Street. S. E. Holcombe, president; O. H. Bogart, secretary; James Gunn, superintendent; C. D. Morrison, O. H. Bogart, S. E. Holcombe, D. L. McDonald, A. J. Baldwin, trustees. Annual meeting, second Monday in March. No. of shares, 60,000. No. of feet, 1,500.

BODIE CHIEF MINING COMPANY.

BODIE, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. Alex. Forbes, president; H. A. Charles, vice-president; D. F. Verdenal, secretary; Alex. Forbes, H. A. Charles, Robert Sherwood, S. F. Gashwiler, E. B. Clement, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

BODIE HYDRAULIC MINING AND WATER COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 22, Nevada Block. A. J. Ralston, president; E. C. Masten, secretary; Joseph H. Coulter, superintendent; A. J. Ralston, H. M. Yerington, G. T. Coulter, R. N. Graves, N. K. Masten, trustees. Annual meeting, second Tuesday in September. No. of shares, 50,000.

This company bids fair to be one of the most prominent corporations of its character on the coast. It has already purchased extensive water rights and privileges, including several large lakes located about twelve miles from Bodie; as well as ten one-quarter sections of excellent timber land. It is the purpose of the company to supply the town of Bodie and its surroundings with water for domestic, mechanical, and mining purposes. The work of developing extensive gravel beds has already begun. Several prospecting shafts have been sunk, one of which has reached the depth of 30 feet, carrying gold all of the way from the surface. About one-half mile of ditching has been completed, and it is proposed to prosecute the work with vigor during the present season.

CALEDONIA GOLD MINING COMPANY.

WHITE WOOD, BLACK HILLS, DAKOTA TERRITORY.

Office, Rooms 6 and 7, San Francisco Stock Exchange. Solomon Heydenfeldt, president; M. L. McDonald, vice-president; D. F. Verdenal, secretary; Bank of California, treasurer; Solomon Heydenfeldt, Henry D. Bacon, M. L. McDonald, Frank Logan, J. W. Gashwiler, directors. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

CHARTER OAK MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 424 Montgomery Street. Wm. H. Howland, president; John Daggett, vice-president; W. A. Lawson, secretary; L. J. Lewis, superintendent; W. H. Howland, John Daggett, John S. Morgan, A. P. Cox, C. B. Putnam, trustees.

This mine was purchased by L. J. Lewis in October, 1878, containing 1,500 feet in length and 100 feet in width; is situated in a southerly direction and contiguous to the Con. Pacific Company's ground, and about 900 feet south-westerly from the Bodie mine. A shaft is being sunk vertically on the vein, which has been exceedingly hard for 50 feet, with a mixture of quartz and porphyry. When at 60 feet in depth, the vein changed to softer gangue, with some water—giving unmistakable evidences of near approach to a body of milling ore. The location of this mine is one of the best in the district for cheap working, being near the town, with roads in close proximity; while it is contended by experts that the rich veins of ore already developed on the northerly end, and adjoining this mine, must surely pass through this company's property. Hoisting works will be erected at an early day.

CHIEFTAIN MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. Robert Sherwood, president; F. Tagliabue, vice-president; D. F. Verdenal, secretary; Robert Sherwood, F. Tagliabue, D. F. Verdenal, George Wilder, J. W. Harker, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

The Superintendent, Mr. Thomas Buckley, under date of September 19, 1878, writes as follows:

"The Chieftain is favorably located, joining the Summit on the north and the May Belle mine on the south. The main shaft is down 75 feet and is in good condition. On the 50-foot level a crosscut has been run to the west, cutting the ledge at the distance of 15 feet from the shaft. The vein is fully three feet wide, enclosed between well-defined walls, dipping to the west at an angle of 60 degrees. I have not as yet tested the quartz myself, but I am assured by those last working the vein that it is good and prospects well in gold. The contractors commenced work on the mine yesterday, and I will see that they fulfill the letter of their contract, and I will report to your office the weekly progress of the work."

COLUMBIA CONSOLIDATED MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA

Office, Rooms 6 and 7, San Francisco Stock Exchange. John P. Jackson, president; James H. Crossman, vice-president; D. F. Verdenal, secretary; J. V. Simons, O. H. LeGrange, James H. Crossman, John P. Jackson, Geo. W. Kidd, directors. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,000.

This mine lies directly east of the Gould & Curry, on the line of the new bonanza developments, and has one of the best prospects in the district.

CONSOLIDATED WYOMING GOLD MINING COMPANY.

NEVADA CITY, CALIFORNIA.

Office, Room 4, 309 California Street. A. G. Gurnett, president; J. M. Buffington, secretary; J. M. Buffington, Jr., superintendent; A. G. Gurnett, W. J. Gurnett, Chas. Pace, J. J. Hucks, J. M. Buffington, trustees. Annual meeting, last Monday in March. No. of shares, 100,000. No. of feet, 4,000. Shares per foot, 25. Bullion yield, \$253,761.65.

This mine, the location of which is given above, is composed of the Ural and Wyoming claims. The ledges have been prospected through a shaft 400 feet deep on the Ural ledge, and a shaft 300 feet deep on the Wyoming ledge. The ore body in the Ural ledge is five feet wide; in the Wyoming ledge, two and a half feet wide. Assays from the Ural average \$100 per ton. The company have two hoisting works, one steam engine, and one hurdy-wheel for water, and a sixteen-stamp mill run with water power, together with machinery which cost \$25,000. The amount of precious metals which have been extracted already reaches the sum of \$253,761.65.

CRESCENT MILL AND MINING COMPANY.

CRESCENT MILLS, PLUMAS COUNTY, CALIFORNIA.

Office, 106 Liederdorff Street. D. L. McDonald, president; O. H. Bogart, secretary; T. J. Shackelford, O. H. Bogart, W. F. Bogart, J. M. Bogart, trustees. Annual meeting, first Monday in January. No. of assessment, 1. Levied, January 8, 1876. Total assessment, \$10,000.

CREVICE MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 414 California Street. E. D. Wheeler, president; William P. Gummer, secretary; E. D. Wheeler, J. W. Winter, Philip Hinkle, J. A. Chandler, George Humphrey, trustees. Annual meeting, first Monday in November. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

DON QUIXOTE MINING COMPANY.

LAKE DISTRICT, MONO COUNTY, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. J. P. Dyer, president; C. X. Hobbs, vice-president; D. F. Verdinal, secretary; Lazard Freres, treasurer; J. P. Dyer, C. X. Hobbs, A. H. Rutliertford, T. B. Reynolds, R. H. Lloyd, directors. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

DUDLEY MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 22, Nevada Block. A. J. Ralston, president; E. C. Masten, secretary; W. P. Holmes, superintendent; A. J. Ralston, N. K. Masten, W. M. Stewart, R. N. Graves, J. M. Quay, trustees. Annual meeting, second Monday in September. No. of shares, 64,000. No. of feet, 1,125. Listed on San Francisco Stock and Exchange Board.

The Dudley property is located in one of the most favorable portions of the now famous Bodie district. The claim was conveyed to the present owners by the Aurora Tunnel and Maybelle companies. It is situated about south of the Jupiter and southeast of Mono. A shaft has been sunk to a depth of 100 feet and discloses a vein of ore 15 feet wide that is about equal in assay to the Standard and the Bodie. There also have been discovered four other veins of ore of less width, but paying high. Some very valuable specimens have been taken from this ledge that approximate very near to pure silver and gold. The vein, in its general character, carries with it a great deal of silver, and instances of finding specimens of free gold and wire silver together. Active work is progressing in the development of the mine, and the hoisting works are pushed to their fullest capacity. Crosscutting will begin at once and will be pushed ahead as fast as giant powder and muscle can operate. The company does not propose to allow a valuable property to lie dormant. Great results are ultimately expected from this mine.

EAST BONANZA MINING COMPANY.

FLOWERY DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 4, 426 California Street. C. L. Weller, president; O. C. Miller, secretary; W. Rose, superintendent; O. H. LaGrange, J. P. Garvey, C. L. Weller, J. P. Jackson, A. Andrews, directors. Annual meeting, first Tuesday in September. No. of shares, 100,000. No. of feet, 1,500.

The Bonanza lies south of the Flowery Con., in a very favorable location. The claim is an old one, and has been worked for years. Pay ore having been struck in their new shaft, the work of development will be pushed vigorously and systematically until the mine is thoroughly prospected. And under the management of Col. C. L. Weller as President and W. Rose as Superintendent, the mine cannot fail to be a success.

ENTERPRISE MINING COMPANY.

BODIE, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. M. Mayblum, president; Alex. Forbes, vice-president; D. F. Verdinal, secretary; J. C. Lennon, superintendent. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

FAIRFAX MINING COMPANY.

VIRGINIA, NEVADA.

Office, Rooms 2 and 3, London and San Francisco Bank. O. H. LaGrange, president; O. C. Miller, secretary; John W. Coleman, John Rosenfeld, O. H. LaGrange, Max Morgenthau, O. C. Miller, trustees.

This mine is located directly east and in front of the Mexican and Union Consolidated mines—two very prominent mines, holding an advanced position in the mining market, and whose future is second to none upon the Comstock Lode. The title to the Fairfax mine is perfect, and is supported by United States patent for 800 feet on the ledge, with a mill site. The location of the Fairfax mine was made in February, 1863, in full compliance with the requirements of the laws of the district, and the claim has been sustained by use and occu-

pation to this date. The tunnel of the company was run to develop the ledge a distance of 270 feet; and its shaft is now in the most promising condition for pay ore within a short distance of the present workings. It is the intention of the company to push the development of the mine with great vigor, having the assurance of a bright future, from the recent prospecting of an ore body by the Sierra Nevada directly on a line with the shaft of this company, and only a short distance from it.

In the early days of the Comstock, it was upon the ground belonging to the Fairfax Mining Company that rich discoveries of gold were made upon the surface, and, by the further working of the claim, feeders and stringers of ore, and small veins here and there, were encountered, from which good assays in gold and silver were obtained. These are sure indications of a chimney or large deposit of ore in close proximity.

FLOWERY CONSOLIDATED MINING COMPANY.

FLOWERY DISTRICT, VIRGINIA CITY.

Office, 426 California Street. T. P. Jackson, president; O. C. Miller, secretary; W. Rose, superintendent; General LaGrange, I. P. Garvoy, T. P. Jackson, Colonel Anderow, Wm. Rose, trustees. Annual meeting, 1st of September. No. of shares, 90,000. No. of feet, 3,000. Shares per foot, 30.

The Flowery Consolidated lies southeast of the old Flowery mine. The company are now engaged in running a tunnel. A large body of pay ore has been struck, but owing to the position of the stratification of the bed-rock, a shaft will be required, and hoisting works erected, and preparations are being made, by W. Rose, our well known mining engineer. The mine is under the management of Col. T. P. Jackson, and will, undoubtedly, be a bullion-producing one, and lucrative to its stockholders.

GARIBALDI GOLD MINING COMPANY.

CALAVERAS COUNTY, CALIFORNIA.

Office, 318 Pine Street. L. J. Lewis, president; J. W. Clark, secretary; L. J. Lewis, superintendent; Cyrus Palmer, R. H. Rogers, S. J. Corbett, A. P. Cox, L. J. Lewis, trustees.

The Garibaldi mine has been worked at intervals since 1861. It lies on the eastern side of the Stanislaus River, one mile below the celebrated Melones mine and about one mile west of the northern lode at Carson. Has bold croppings at intervals for 3,000 feet, is 10 feet wide, and yields from \$10 to \$20 per ton, the ore worked in arastras. Since L. J. Lewis & Co. have owned this mine they have run a tunnel 150 feet, and drifted on the vein 100 feet, finding a splendid vein of ore 10 feet in width, running from \$10 to over \$100 per ton, with from three to 15 per cent. in sulphurets, worth over \$200 per ton. A mill is about being erected, while there is ore in sight sufficient for 40 stamps. Five thousand miners' inches of water cuts the mine at one end sufficient for 100 stamps. So far as opened, this mine gives indications of being one of the largest and best mines in the State. Another evidence of the richness of this great vein is, that below the ledge the gravel, which is five to ten feet deep, carries over one dollar per cubic yard in quartz gold, while above the vein but a trace of gold is discovered.

GLOBE CONSOLIDATED GOLD AND SILVER MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, 106 Leidesdorff Street. D. L. McDonald, president; O. H. Bogart, secretary; J. I. Ayres, B. L. Schmidt, D. L. McDonald, I. H. Conway, O. H. Bogart, trustees. No. of shares, 100,000. No. of feet, 5,500. No. of assessment, 10. Levied, July 23, 1877.

GLYNN-DALE MINING COMPANY.

BODIE DISTRICT, MONO COUNTY, CALIFORNIA.

Office, 405 California Street. John Neate, president; A. T. Crocker, secretary; Charles Dale, superintendent; Henry T. Scott, F. B. Taylor, Geo. B. Hibbard, John Neate, F. Homer, trustees. Annual meeting, second Wednesday in October. No. of shares, 100,000. No. of feet, 2,634½. Listed on San Francisco Stock and Exchange Board.

The Glynn-Dale mine comprises two claims—the Dale and the Glynn—consolidated. The property lies directly south of the Mono, and adjoins this well-known claim. Upon the mine there are two shafts—the one at the north, upon the old Dale ground, being down about 150 feet, and the southern one, on the Glynn ground, being only down about 55 feet. The north, or Dale shaft, has penetrated a fine body of ore, with well-defined walls, which prompts renewed faith in the locality. At the north side of the shaft the ore body is two feet in width, and at the south side it is about eighteen inches in width, and with every advance in sinking the character of the ore improves steadily, assaying at last accounts as high as \$50 to the ton. On the Glynn property there is a shaft about 130 feet deep, which is situated 1,000 feet from the Dale shaft, which corresponds with the latter by showing a splendid fissure with two good walls, enclosing seven feet of excellent rock, which assays well. From this point, on the 100-foot level, a drift has been run 30 feet north on the vein carrying a fine body of ore, which improves as the drift progresses. The company are so well pleased with their prospects that they propose, at as early a day as possible, to sink a two-compartment shaft in the center of the consolidated ground, which will bring it on to the original Glynn claim, that having the most feet. Machinery and hoisting works will be put up as speedily as possible, and lively times may be expected in this locality. This consolidation is located on the main ore belt of the district, and the claim is second to none other in the locality, so far as future prospects are concerned. The owners of the mine appreciate this fact, and propose to exhaust their resources, if necessary, to bring about a verification of their present great expectations. We look for flattering reports from this mine as soon as active work is fully advanced.

GOLDEN GATE MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 20, Safe Deposit Building. J. R. Scupham, president; Otto Metchke, secretary; A. J. Lynche, superintendent; J. R. Scupham, B. B. Minor, A. W. Havens, T. F. Thompson, J. E. McElrath, trustees. Annual meeting, first Monday in September. No. of shares, 50,000. No. of feet, 1,500 by 300.

The properties of Golden Gate Mining Company are the Sacramento, the Ophir in the center, and the Indianola west, adjoining each other, giving it 1,500 feet in length with 300 feet of surface ground. These properties lay on Bodie Bluff, near the Summit on the south, and but a short distance east of the Standard and Bodie mines, stringers of which were cut into sinking the shaft. This shaft is now down about 90 feet, and carries in the bottom ledge matter of about 4 feet in width. Assays of the ledge, about 18 inches thick, running as high as \$700 per ton. The ledge is in a straight line, with the Dudley and Black Hawk ledge, and evidently the same. Developments are to be pushed as rapidly as possible, which will, to judge from present appearance, show up a good property.

IDA ELMORE MINING COMPANY.

OWHYZEE, IDAHO.

Office, 106 Liederdorff Street. O. H. Bogart, president; J. H. Conway, secretary; D. A. McKinley, T. B. Pheby, O. H. Bogart, J. W. Young, J. H. Conway, trustees. Annual meeting, first Monday in August. No. of assessment, 2. Levied, Sept. 13, 1875. Total assessments, \$105,000.

JOSEPHINE CONSOLIDATED SILVER MINING COMPANY.

PHILADELPHIA, NYE COUNTY, NEVADA.

Office, 106 Liederdorff Street. A. K. Grim, president; O. H. Bogart, secretary; W. F. Leon, superintendent; A. K. Grim, V. Fernbach, D. L. McDonald, O. H. Bogart, W. F. Leon, trustees. Annual meeting, third Tuesday in October. No. of shares, 25,000. No. of feet, 2,500. Shares per foot, 10. No. of assessment, 1. Levied, July 20, 1874. Total assessment, \$3,750.

JUNIATA CONSOLIDATED SILVER MINING COMPANY.

ESMERALDA, ESMERALDA COUNTY, NEVADA.

Office, 312 California Street. A. J. Ralston, president; C. V. D. Hubbard, secretary; George Daly, superintendent; H. M. Yerrington, A. J. Ralston, S. P. Smith, R. N. Graves, Thomas Brown, trustees. Annual meeting, October 14. No. of shares, 50,000.

This claim is located in Esmeralda district, and is the original claim from which the Real del Monte was segregated. The property is owned by the same parties, and the development of the latter mine will determine the character of the Juniata. The exterior indications are necessarily similar to those of the Real del Monte, and it is fully believed that the mine will ultimately prove in the highest degree remunerative. The owners of the property propose to utilize every facility that capital can command to develop the mine. We anticipate a prosperous future for both this and the Real del Monte.

JUPITER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 22, Nevada Block. A. J. Ralston, president; E. C. Masten, secretary; R. D. Braven, superintendent; A. J. Ralston, H. M. Yerrington, Wm. M. Gwin, Jr., N. K. Masten, Josiah Belden, trustees. Annual meeting, third Monday in September. No. of shares, 64,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

This property was formerly known as the old "Savage" claim, and is located east of the Bodie, adjoining that famous claim. It is bounded on the north by the Standard and the Summit claims. There is a shaft upon the property, that has been sunk to the depth of 110 feet. At this point assays reach from \$30 to \$40 per ton, and is supposed to carry the Standard ledge. The property has been carefully examined by experts, and it is conceded by all who have visited and investigated its indications, that it possesses one of the most valuable locations in the Bodie District. It is proposed by the management to push the work vigorously through the Winter, and it is confidently expected that, as the work progresses, we shall be favored with developments of a character second to none in the district.

LOLA MINING COMPANY.

GLOBE DISTRICT, MARICOPA COUNTY, ARIZONA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. L. L. Robinson, president; Clinton Gurnee, vice-president; D. F. Verdensal, secretary; L. L. Robinson, Robert Sherwood, Clinton Gurnee, Alex. Forbes, J. W. Gashwiler, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

MARYLAND MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 20, Safe Deposit Building. John N. Risdon, president; Otto Metchke, secretary; G. H. Howard, superintendent; E. C. Locke, L. W. Mix, John N. Risdon, G. H. Howard, Henry C. Hyde, directors. Annual meeting, third Wednesday in September. No. of shares, 60,000. No. of feet, 1,500.

The Maryland joins the Adler on the North, running almost to the apex of Queen Bee Hill. It is one of the few locations which show bold croppings on the surface. These croppings have been followed down by a shaft, which developed a ledge of about 3 feet of very lively quartz, giving fair assays. The location is very favorable; and, to judge from the energy with which developments are pushed, and the present indications, it will soon be also a favorite and remunerative location.

MCCLELLAN CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SIGEL, NEVADA.

The McClellan claims are situated in Sigel District, about eight miles due north from Virginia City. A shaft has been sunk on the ledge, which shows good vein matter, and a crosscut proves it to be twenty-three feet wide. Another ledge of larger extent runs parallel to this, the extent and value of which is being determined daily, and bids fair to prove as valuable as any of its neighbors.

MIDES MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, San Francisco Stock Exchange. H. Rosekranz, president; J. P. Couch, vice-president; D. F. Verdenal, secretary; H. Rosekranz, J. P. Couch, George W. Kidd, William Hoglehirst, J. Morgan, directors. Annual meeting, fourth Saturday in May. No. of shares, 30,000. No. of feet, 200.

The Mides lies between the Seg, Belcher and the Overman. The location is looked upon with especial favor on account of the developments recently made in the Overman. The claim is an old one, the only work done of late being sufficient merely to hold the ground. The probabilities are that within the coming year the claim will be heard from.

MONO AND CROSS CONSOLIDATED MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 4, 309 California Street. W. H. Dolman, president; J. M. Buffington, secretary; Cor. P. R. Dolman, superintendent; W. H. Dolman, Geo. W. Rogers, H. H. Flagg, G. W. Hopkins, C. W. Hoare, trustees. Annual meeting, last Monday in August. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33½. Listed on California Stock Exchange Board.

The Mono and Cross is situated on the western slope of Silver Hill, just west of and running parallel with the South Standard; 3,000 feet in length; is within the porphyry belt of the district. A double-compartment shaft is being sunk, and has developed a well-defined quartz ledge 5 feet in width. At a depth of 65 feet a cross-ledge was cut 6½ feet in width, and of a most promising character. The prospective value of this mine bids fair to remunerate the stockholders at an early day.

MORNING STAR MINING COMPANY.

VIRGINIA CITY.

Office, Room 7, Stevenson Building, corner California and Montgomery Streets. W. H. Reed, president; J. B. Maholm, secretary; John R. Logan, superintendent; W. H. Reed, George Stone, George E. Clarke, J. S. Wilson, J. F. Broadhead, trustees. Annual meeting, last Tuesday in April. No. of shares, 80,000. No. of feet, 1,600. Listed on San Francisco Stock and Exchange Board.

This is one of the earliest locations on Cedar Hill, having been taken up and recorded in 1860, and the chain of title kept up all the way through. The claim is an extensive one, and covers a section of what is known as the "Red Ledge," one of the main Comstock group, here shown by a series of parallel croppings. The Morning Star adjoins the Sierra Nevada on the north and east, the Utah on the South; wherefore, if they have a bonanza in the Sierra Nevada ground, it is almost certain to extend into the claim of this company. In 1860, a shaft was started in the Morning Star location and sunk, until a heavy influx of water forced a suspension of the work. A tunnel was then started at a point about half-way between the present working shafts of the Sierra Nevada and the Utah mines, and carried in 600 feet, cutting the "Red Ledge" at a depth of about 200 feet, and nearly under its croppings, showing it to stand almost vertical. This lode, at the point where the tunnel intersected it, carried a streak of good milling ore, about 15 inches thick, the lode itself being strong and well defined. The tunnel was then continued through quartz and vein matter, nearly another 100 feet, where a second lode, between 20 and 30 feet in width, was intersected. This lode carried a large body of ore, having all the types of the genuine Comstock variety, the bluish-white tinge, and abounding in sulphurets and chlorides. This ore could now be milled with a handsome profit, but would not at that day pay for working, the cost of reduction alone amounting to \$30 per ton. Encouraged by this showing of ore, the company proceeded to sink a winze in this tunnel, but here again their purpose was frustrated by the inflow of water, which compelled them at a depth of 30 feet, to suspend work, the bottom of this winze being in \$50 ore. This ore, like most of that obtained near the surface on Cedar Hill, contained 65 per cent. gold, with a heavy percentage of the sulphurets and chlorides of silver, as can be demonstrated by an examination of the dump, where it has been lying in considerable quantity since the time of extraction. Finding it impossible to further explore their mine, without machinery to relieve it of water, the company suspended operations, doing very little work upon it for a long series of years. The ground being wet and heavy, the most of the tunnel, meantime, caved in, cutting off access to the ledges below.

The recent great ore strike in the adjoining grounds having inspired the Morning Star Company with new hopes, they have recommenced work on their mine with the purpose of exploring it with system and thoroughness. The old tunnel has been cleaned out and retimbered for its entire length. The shaft will be at once sunk to a depth of 500 feet, and be connected with the tunnel by drifts. Active ore extraction will at once follow, in the confident belief that the mine can thenceforward be made self-sustaining, and soon thereafter be advanced to a dividend-paying position.

There is no more promising mine among the new aspirants to fortune and fame on the "North End" than the Morning Star. If the bonanzas that have been strewn along this great metaliferous highway do not stop short at the Sierra Nevada, they must continue on through this ground. But, having traveled up to this point, they will not stop here. The geology of this ground, the developments already made, the heavy flow of water, all point to the presence of a broad and prolific ore channel here. The history of this mine lies mostly in the future; until which we postpone a further writing, in the expectation that its future will prove a great success.

NORTH SIERRA NEVADA SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 1, 309 California Street. Robert Sherwood, president; A. F. Main, secretary; J. G. Mather, superintendent; Robert Sherwood, D. Crittenden, J. W. Roberts, Geo. Barstow, John E. McDonald, trustees. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board, California Stock Exchange Board, and Pacific Stock Exchange.

The North Sierra Nevada mine is located directly east of the Utah, and north of the Sierra Nevada about 200 to 400 feet, and is in a most favorable neighborhood. Upon the property are two shafts, one of which is down about 30 feet, and the other about 100 feet deep. The indications are very flattering, and it is proposed as soon as possible to sink a three-compartment shaft. The appearance of the ground, so far as exhibited by the two shafts, is of the same character as that of the vein in the surrounding properties, and the management are very sanguine as to the future of their mine. They propose to be liberal in their outlay, and anticipate ample remuneration corresponding to the work of development.

PIONEER MINING COMPANY.

VIRGINIA, STORRY COUNTY, NEVADA.

Office, 310 Pine Street. W. H. Wallace, president; J. W. Pew, secretary; W. H. Wallace, W. H. A. Mason, C. Land, J. M. Byrne, E. Straus, trustees. No. of shares, 100,000.

The Pioneer claim lies about 1,000 feet northeast of the Sierra Nevada shaft, and north of and adjoining the Scorpion claim. A three-compartment shaft has been located and sunk to the depth of 100 feet. In making this depth, the shaft passed through a strata of vein matter yielding fair assays. The property has, since September, 1878, passed into new hands, been re-incorporated, and all conflicting titles settled. The present managers propose to at once start work upon the claim, continue sinking the shaft, and erecting the necessary hoisting machinery. Number of feet in claim, 1,200 by 1,500, consisting of the Pioneer and Japan claims.

REAL DEL MONTE MINING COMPANY.

ESMERALDA MINING DISTRICT.

Office, 312 California Street. A. J. Ralston, president; C. V. D. Hubbard, secretary; George Daly, superintendent; A. J. Ralston, R. N. Graves, N. K. Masten, Daniel Cook, H. M. Yerrington, trustees. Annual meeting, third Tuesday in October. No. of shares, 50,000. No. of feet, 1,000. Shares per foot, 50. No. of (last) assessment, 3. Amount, \$1. Levied, May 22, 1878. Total assessments, \$50,000.

SANTA MINA MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 405 California Street. John Neate, president; A. T. Crocker, secretary; John Hendry, superintendent; John Neate, J. H. Fish, George B. Hilberd, J. S. Farnald, F. Hoimer, trustees. Annual meeting, third Thursday in September. No. of shares, 50,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

The Santa Mina mine is located on the west side of Bodie Peak, to the north of and adjoining the Sitting Bull claim. It is in a most desirable situation, and is surrounded with ample facilities for successfully working. There are upon the property two shafts, one of which is about 10 feet deep and the other about 40 feet deep, and, at these depths, the rock displayed appears to be of the same character as that of the Bodie and the Standard. The assays reach as high as \$50 per ton, and from the character of the ore at the bottom of the shafts, it appears more than probable that the assays will greatly improve as a lower depth is reached. The company are now contemplating in addition to the shafts already sunk, to run a tunnel into the hill, by which they calculate to get a backing of 400 feet on the ledge. The work on the tunnel will commence in a very short time, meanwhile it is proposed to sink the shafts already begun to a depth of at least 200 feet, when it is believed the assays will run far up in the hundreds. The general outlook of this mine is highly propitious, and the directors propose to use every means at their command to develop the property to its fullest worth.

UNCLE SAM MINING COMPANY.

BURRKA, NEVADA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. L. L. Robinson, president; Clinton Gurnee, vice-president; D. F. Verdinal, secretary; Lazard Freres, treasurer; L. L. Robinson, Clinton Gurnee, J. H. H. Williams, D. F. Verdinal, Thos. Findley, Francis Cutting, Geo. W. Hopkins, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

CARD OF THANKS.

MR. R. S. LAWRENCE, editor-in-chief, desires, for himself and his assistants, to express sincere thanks to the Presidents, Secretaries and Trustees of mining companies, for the uniform kindness and courtesy extended by them all during the compilation of the foregoing MINING REVIEW.

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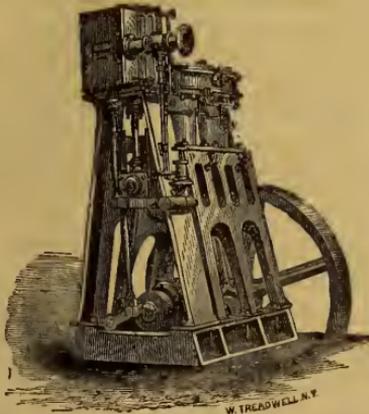
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 WM. VOEGTLIN.....Scenic Artist CHAS. SCHULTZ.....Musical Director

The CALIFORNIA THEATRE is one of the historical Institutions of the City. It was opened to the public on Monday night, January 15, 1869, with the play of "MONEY." Since that time, nearly all the great Stars of the world have played engagements under its management. The following list shows the date when each Star's engagement commenced:

1869.		
Mch 15. John E. Owens. May 10. Charlotte Thompson. July 5. John Brougham. Aug. 6. Neil Warner.	July 19. Eliso Holt. Aug. 16. Lotta. May 4. Etwin Adams. Nov. 1. Charlotte Thompson.	Nov. 29. Brignoli Opera Troupe. Dec. 27. Mazetti & Lehman's Ballet in Cherry and Fair Star.
1870.		
Mch 14. The Bonfanti Ballet in Giraldi & Duke's Motto. Ap'l 18. Mary Gladstone. May 30. Walter Montgomery.	June 22. Lydia Thompson Troupe. Aug. 1. Joseph Proctor. S'pt. 19. F. S. Chanfrau. Oct. 17. Dan Bryant & Little Mac.	Dec. 12. G. R. Thorne, Jr. Dec. 19. W. R. Floyd. Dec. 23. Morlacchi and Ballet in Monto Christo.
1871.		
Jan. 23. Rose Evans. Feb. 27. Fanny B. Prico. Mch 16. Charles Matthews. Mch 27. Zavastowski Sisters. Ap'l 16. Herr Bandmann.	Ap'l 17. J. K. Emmet. Ap'l 30. Professor Haselmayer. May 1. Imogene Van Dyke. May 8. Mrs. F. W. Landor. May 29. Edwin Adams.	July 3. The Lizards. July 31. Mrs. F. W. Landor. Sept. 4. Mrs. D. P. Bowers. Oct. 16. F. S. Chanfrau. Nov. 13. Oliver Doud Byron.
1872.		
Jan. 9. Annotte Ince. Jan. 12. Madame Veneta. Jan. 29. Charles Wheatleigh. Ap'l 2. Lottie Williams. Ap'l 10. Vontruoli Ballet in Palace of Truth.	Ap'l 16. The Majiltons. May 6. Carlotta Leclercq. June 3. Lawrence Barrett. July 1. The Aimee Opera Bouffe. Oct. 3. The Fabbri Opera Troupe.	Oct. 14. John McCullough. Nov. 14. Mrs. F. S. Chanfrau. Dec. 25. The Rigi Sisters' Ballet in Alladin.
1873.		
Jan. 20. John T. Raymond. Mch 3. Augusta L. Dargon. Mch 24. John McCullough. Ap'l 14. Mrs. D. P. Bowers. May 19. Barton Hill. June 2. John McCullough.	June 22. Wieniaski. June 30. E. A. Southern. July 23. Frank Mayo. Aug. 11. Charlotte Thompson. Sept. 15. Carlotta Leclercq. Oct. 13. May Howard.	Oct. 29. Shiel Barry. Dec. 25. The Girards, Areadon & Remmelsburg Ballet in Naiad Queen.
1874.		
Jan. 19. Dion Bouceicault. Feb. 3. Catherine Rogers. Feb. 16. John McCullough. Mch 10. Adelaide Neilson. Ap'l 6. John T. Raymond. May 4. Charles Pope and Bonfanti Ballet.	May 18. Aimee Opera Bouffe. June 29. E. A. Southern. July 29. Lotta. Aug. 17. The Vokes Family. Sept. 17. Mrs. F. S. Chanfrau. Oct. 5. Frank Mayo and Rosa Rand.	Nov. 2. Agnes Booth and Joseph Wheelock. Nov. 11. W. J. Florence. Dec. 14. John McCullough.
1875.		
Jan. 18. Clara Morris. Marc. 8. Clara Morris. Mar. 15. Little Nell. Mar. 29. Catherine Rogers. Ap'l 27. Mrs. D. P. Bowers and J. C. McCollom. (Lingard). May 24. Alice Dunning and Dickie.	May 31. Madam Janauschek. June 28. H. J. Montague. July 5. Dion Bouceicault. Aug. 9. Alice Dunning and Dickie Lingard. Sopt. 6. Lawrence Barrett.	Oct. 4. Dominick Murray and C. W. Barry. Nov. 1. Joseph Murphy. Dec. 15. Wm. Horace Lingard. Dec. 24. Teresa Antonnio, Leona Daro and Garnella.
1876.		
Jan. 24. Emma Waller. Feb. 28. Mrs. Scott Siddons. Mar. 27. John McCullough. Ap'l 17. F. S. Chanfrau. May 15. Edwin Adams. (zie Price). May 23. Charles Fechter and Liz.	June 5. Lawrence Barrett with Lightning Train Co. July 3. John T. Raymond. July 24. Rose Eytling. Aug. 21. Mary Anderson. Sept. 4. Edwin Booth.	Oct. 31. German Opera Bouffe. Nov. 13. Frank Mayo. Dec. 4. Little Nell. Dec. 25. Mr. and Mrs. W. J. Florence.
1877.		
Jan. 22. E. A. Southern. Feb. 19. Miss Jeffreys Lewis. Mar. 21. Miss Adelaide Neilson. Ap'l 21. The Lizards. May 7. Ben DeBar. May 14. Hess English Opera Co.	June 4. The Soldene Opera Bouffe Co. July 9. The Williamsons Aug. 5. Katy Mayhew. Aug. 20. Helene Modjeska. Sept. 3. Rose Eytling.	Sept. 21. Robson and Crane. Oct. 15. Mrs. D. P. Bowers and J. C. McCollom. Nov. 12. Dampier and children. Nov. 25. Helona Modjeska. Dec. 24. Kiralfys.
1878.		
Jan. 1. Kiralfys. Feb. 4. Majeroni and wife. Feb. 18. Kiralfys. Mar. 25. Charles Pope. April 1. John E. Owens.	Ap'l 22. Augusta L. Dargon. May 20. Laurence Barrett. June 3. Joseph Jefferson. July 1. George Rignold.	July 15. Diplomacy Combination. Aug. 13. Maggie Mitchell. Sept. 2. Robson and Crane. Sept. 30. Frank Mayo.

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The following is an extract from a paper read by Mr. H. G. HANKS, at a recent meeting of the State Geological Society, reported in the *Scientific Press* of March 2d, 1878. He says:

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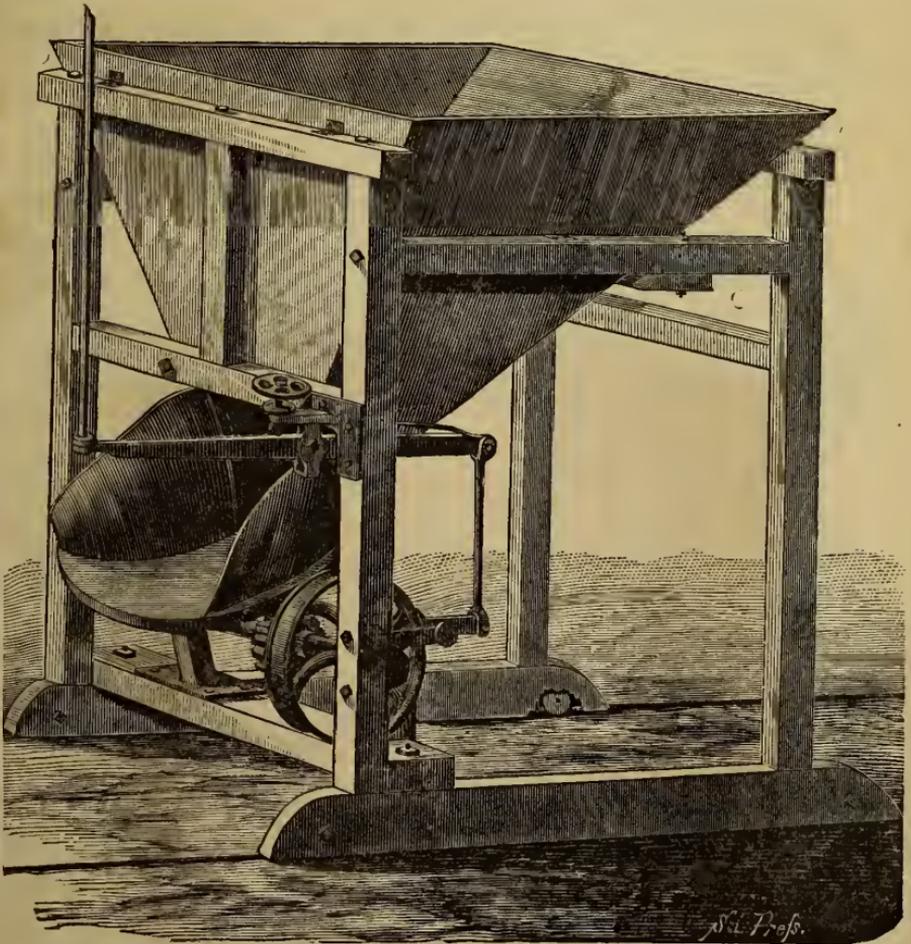
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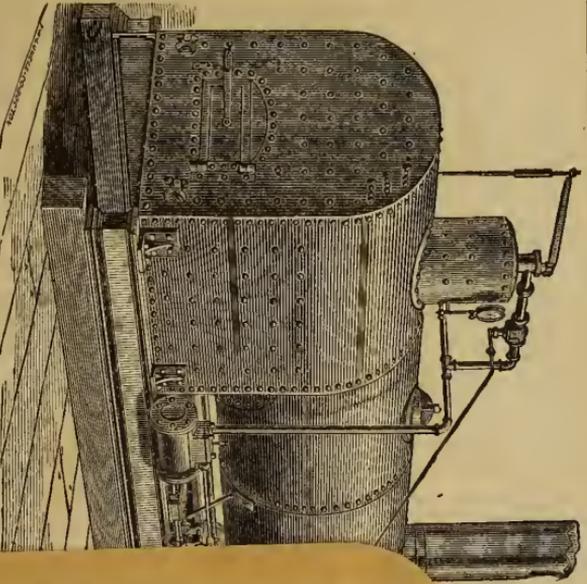
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